ALL ABOUT HISTORY

Churchill's Toyshop

7 unbelievable inventions from the secret war lab of Winston Churchill

VIKING RAIDERS

How heathens from the north turned seas red with blood

TERRACOTTA WARRIORS

Meet the emperor who waged war with death itself

THE FORBIDDEN QUEEN

ANNE BOLEYN

The Tudor scandal that tore England apart

Industrial Revolution

Minds who set the wheels of change in motion

10 forgotten superstars

Spotlight on the celebs you never knew existed

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membership

Read more about the exemplary life of Emmeline Pankhurst on page 38

Welcome

Poor Anne Boleyn has been given a pretty bad rep. Portrayed as a sly, conniving temptress who lured the king away from the country's beloved queen, the truth about Henry VIII's second wife is far less damning. Henry had already had countless affairs, including with Anne's own sister. Educated and strong-willed, Anne was determined not to become just another mistress, and was perhaps the only woman to say "no" to the most powerful man in England. It paid off. After a year of chasing, Henry made her his queen.

This issue we reveal the untold story of Anne Boleyn, and from page 46 we examine what it was that catapulted her from true love to traitor. On page 62, historian and bestselling author John Man tells the dark secrets of the Terracotta Army, unearthing an emperor so terrified of death he spent his life preparing for it. You can also peer into the secret war labs of Winston Churchill on page 78, and discover the bizarre inventions that helped the Allies defeat the Axis powers.

Want to share your views on any of the topics in the magazine? Make sure you head to the **All About History** Facebook page, where you can find loads more fascinating facts and stunning photographs from the past.

Alicea

Alicea Francis

Issue 22 highlights

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Industrial Revolution
Discover the machines, minds and events that changed the way we live today with 12 pages dedicated to the Industrial Revolution.

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Viking Raiders
Was there a more civilised aim to their often barbaric actions? Find out what came after Lindisfarne in our 'Raiders or Traders' feature.

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Forgotten Superstars
From Ancient Greek Olympians to larger-than-life 19th-century opera singers, we showcase ten of the celebrities you never even knew existed.

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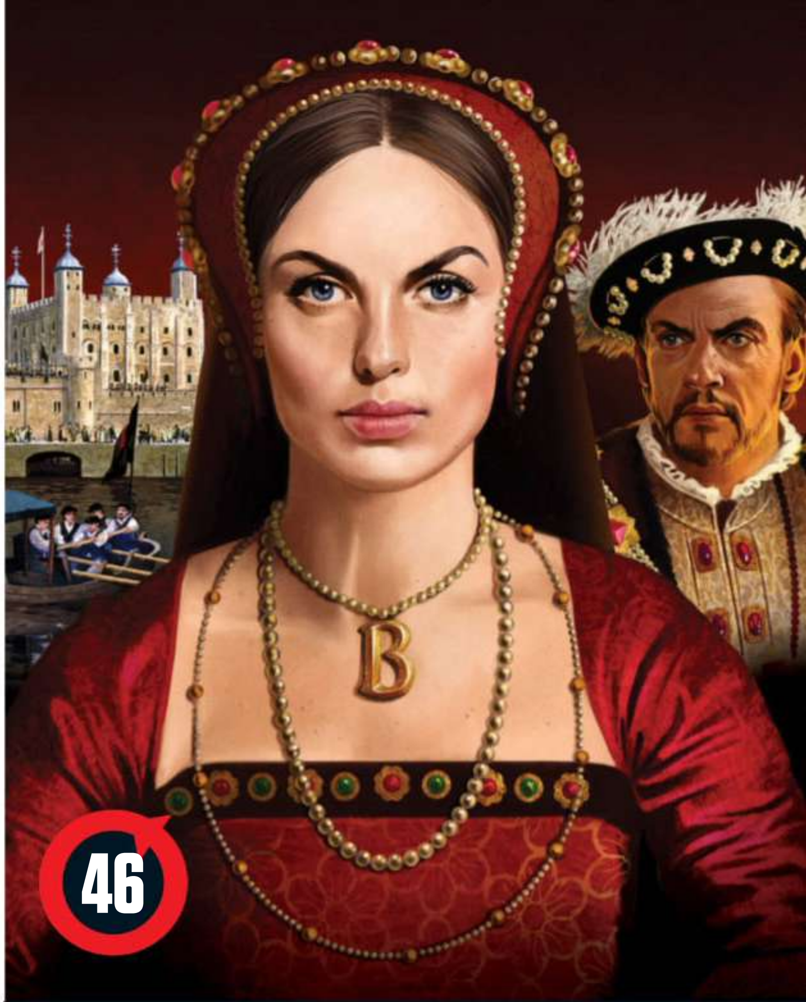

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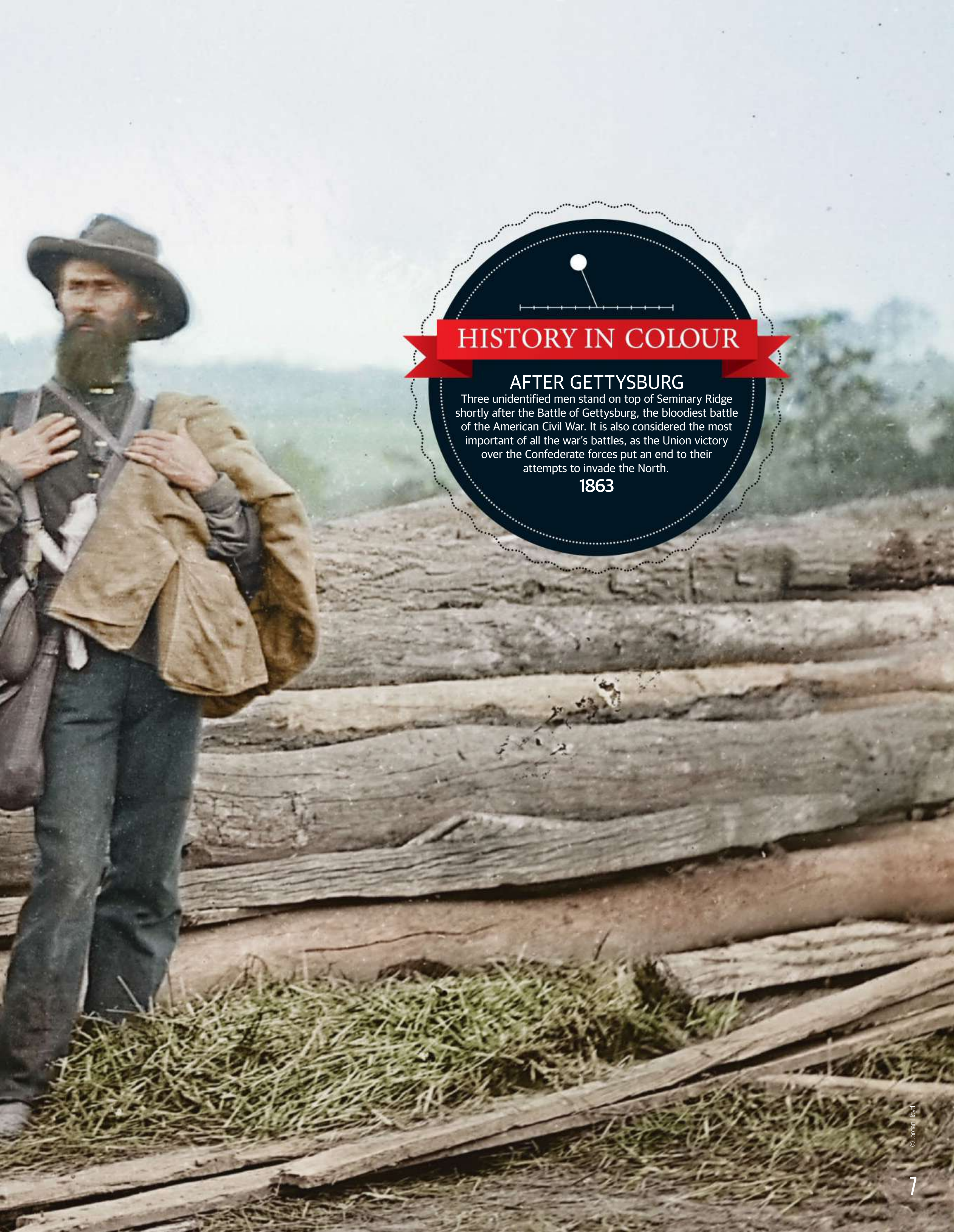


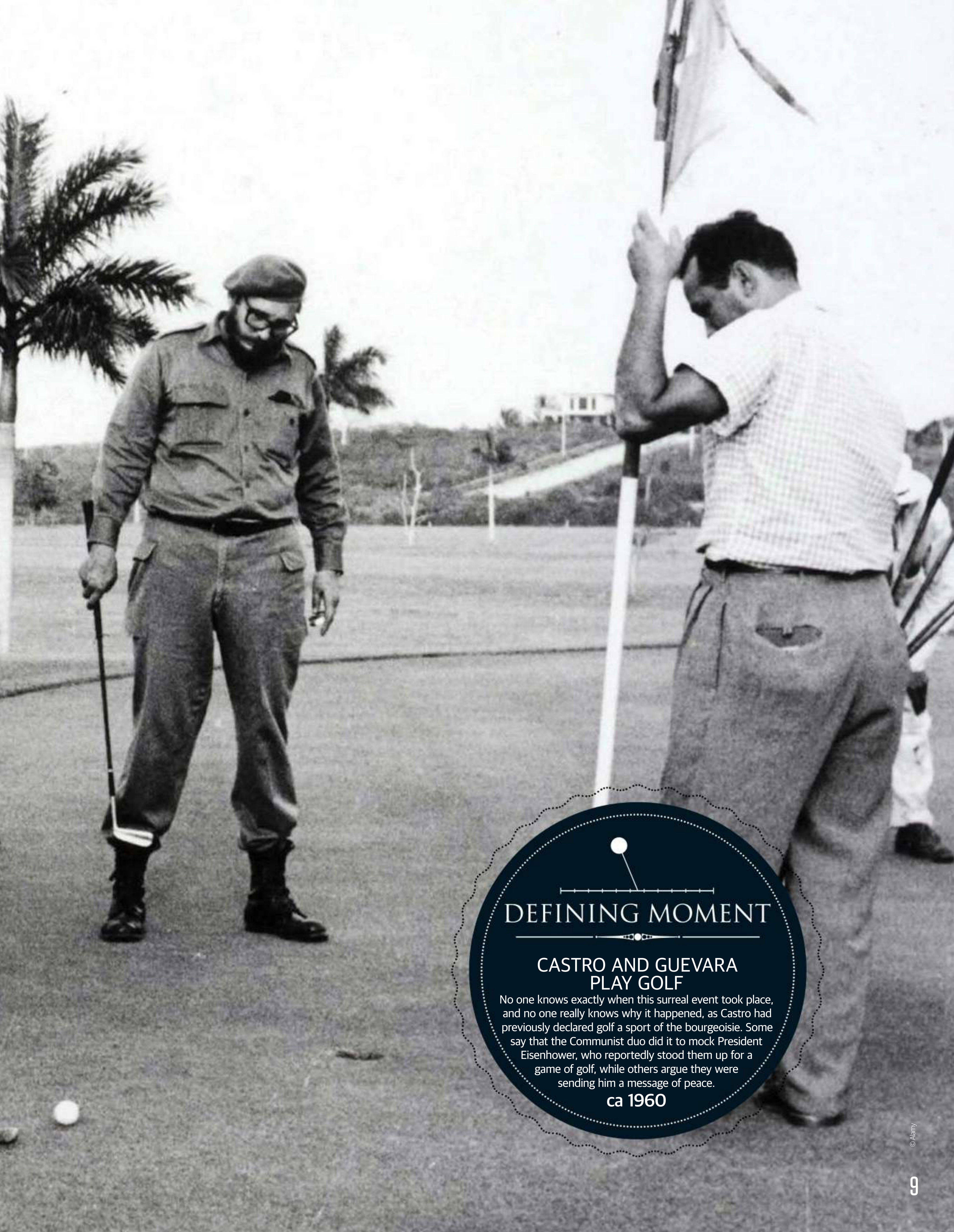
HISTORY IN COLOUR

AFTER GETTYSBURG

Three unidentified men stand on top of Seminary Ridge shortly after the Battle of Gettysburg, the bloodiest battle of the American Civil War. It is also considered the most important of all the war's battles, as the Union victory over the Confederate forces put an end to their attempts to invade the North.

1863

© Jordan Lloyd



DEFINING MOMENT

CASTRO AND GUEVARA PLAY GOLF

No one knows exactly when this surreal event took place, and no one really knows why it happened, as Castro had previously declared golf a sport of the bourgeoisie. Some say that the Communist duo did it to mock President Eisenhower, who reportedly stood them up for a game of golf, while others argue they were sending him a message of peace.

ca 1960

© Alamy

DEFINING MOMENT

UK MINERS' STRIKE

Picketers face police as 'scabs' return to work in the coal mines, despite a nationwide strike. The strike was a reaction to the Thatcher government's announcement that it would close 20 mines, leaving 20,000 people jobless. Violence often broke out between picketers and police, resulting in over 11,000 arrests.

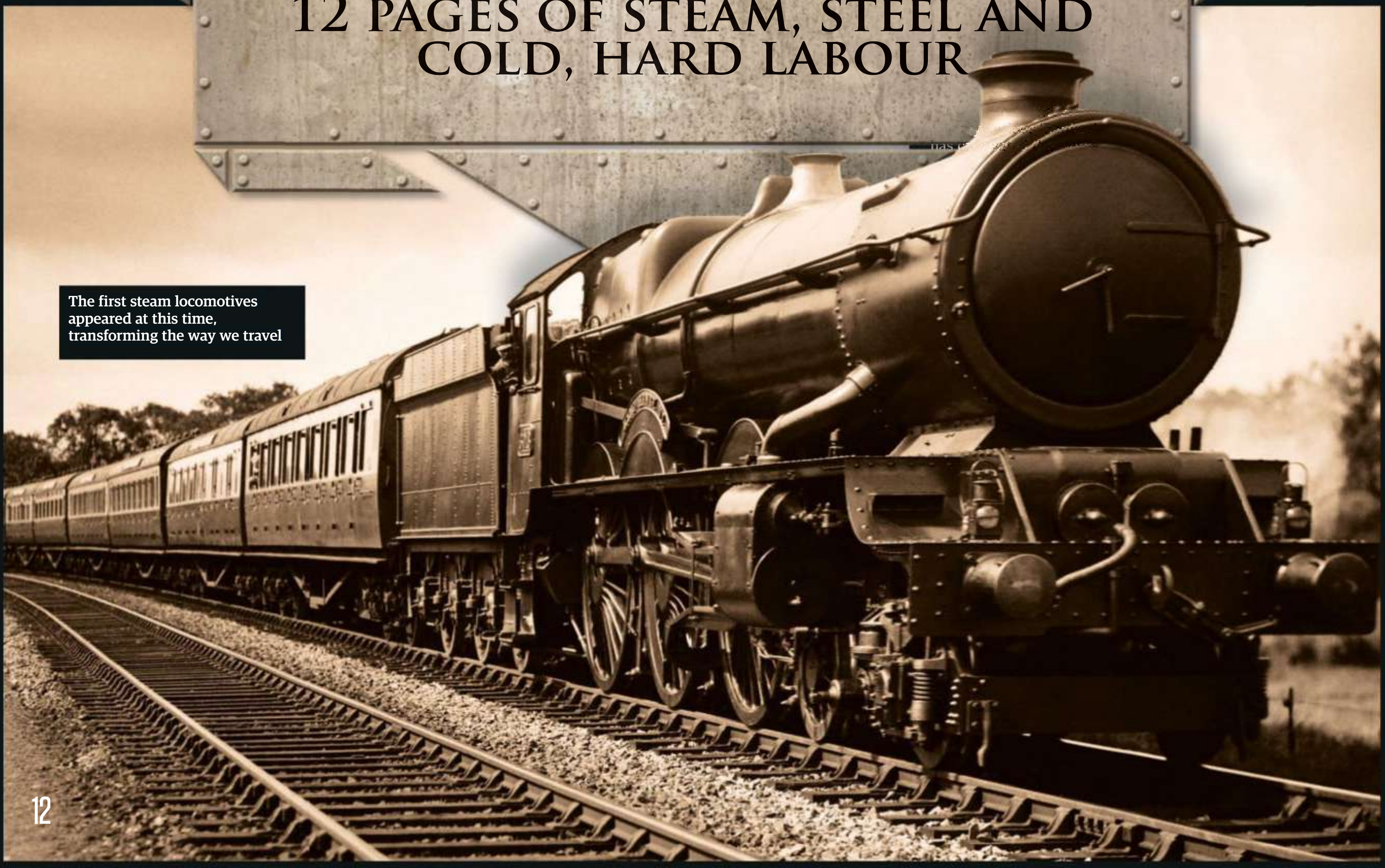
1984

© Corbis

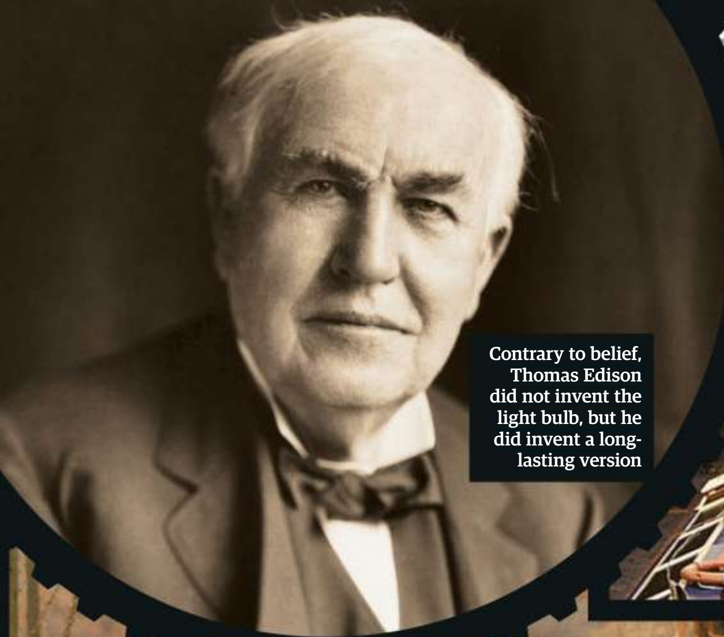
A child could spend 12 hours a day tying cotton threads together, at great risk to their fingers

Industrial Revolution

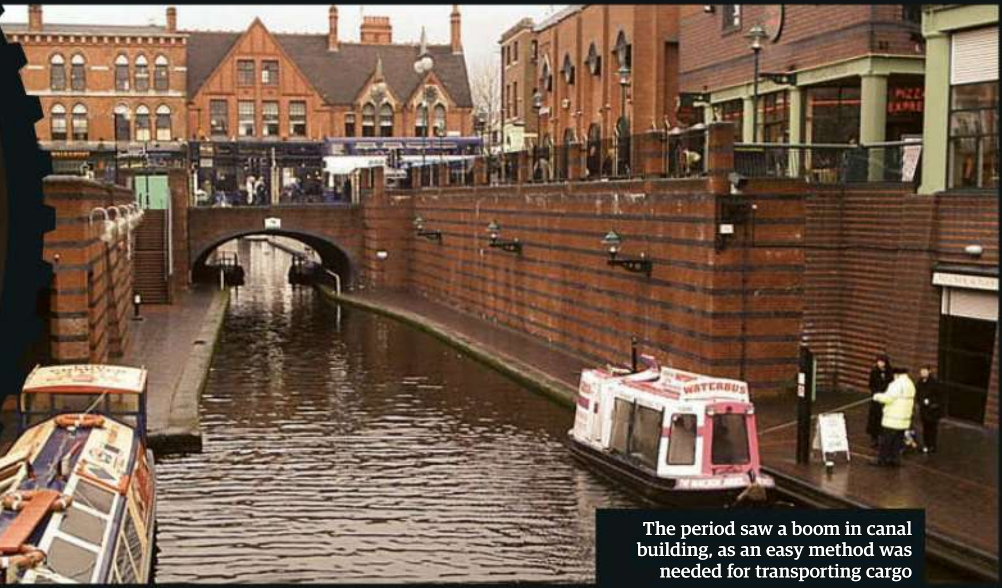
12 PAGES OF STEAM, STEEL AND COLD, HARD LABOUR



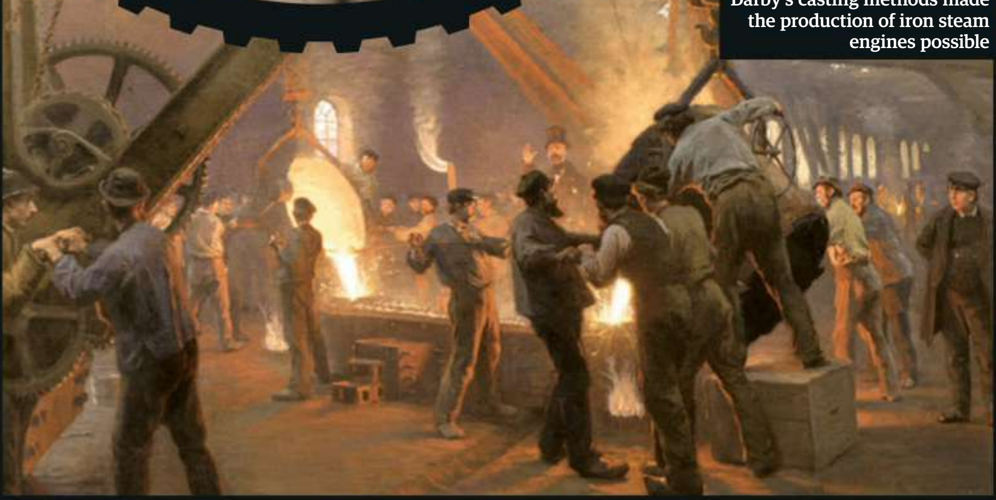
The first steam locomotives appeared at this time, transforming the way we travel



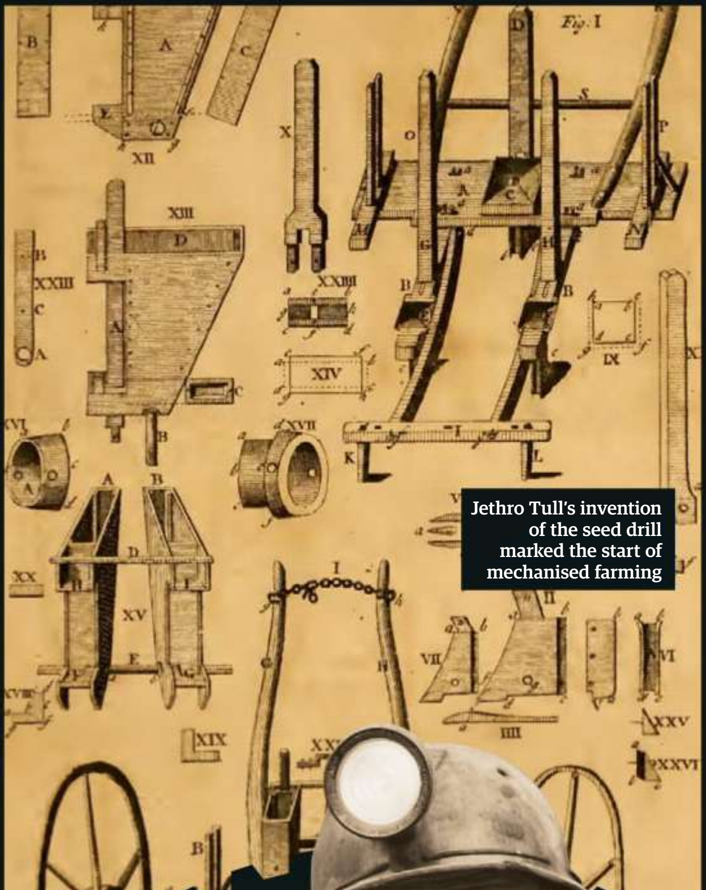
Contrary to belief, Thomas Edison did not invent the light bulb, but he did invent a long-lasting version



The period saw a boom in canal building, as an easy method was needed for transporting cargo



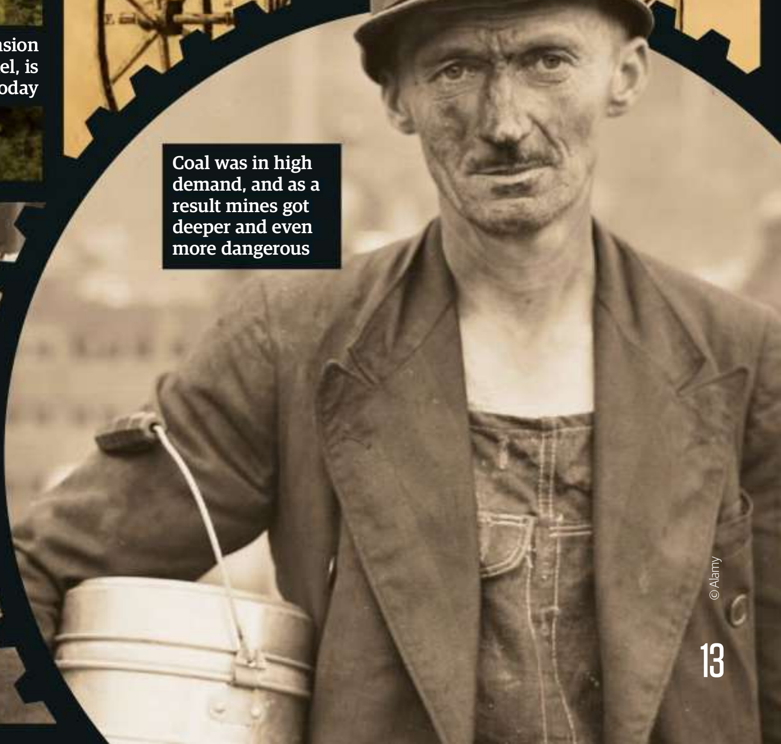
Darby's casting methods made the production of iron steam engines possible



Jethro Tull's invention of the seed drill marked the start of mechanised farming

The Clifton Suspension Bridge, designed by Brunel, is still in use today

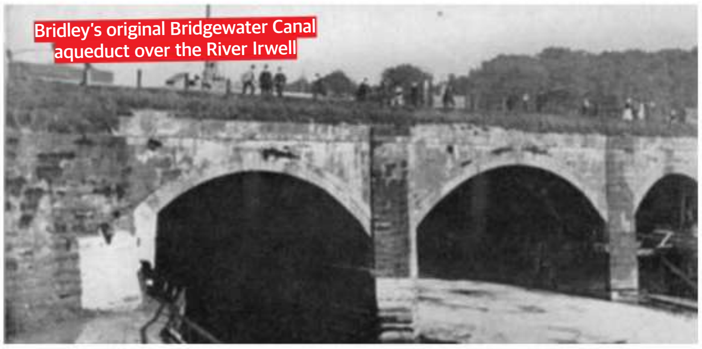
The sick, orphaned and elderly were sent to workhouses, where they were often cruelly treated



Coal was in high demand, and as a result mines got deeper and even more dangerous

© Alamy

Industrial Revolution



Bridley's original Bridgewater Canal aqueduct over the River Irwell

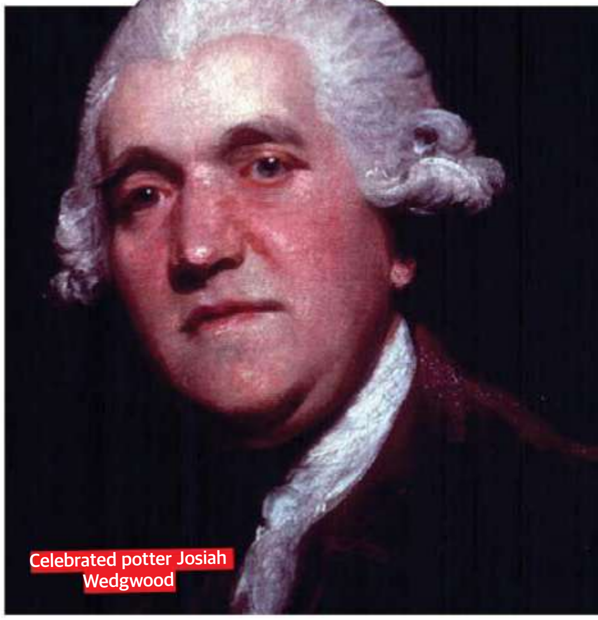
THE FIRST TRANSPORT SYSTEM BRITAIN 1761

The transportation of heavy goods was vital for the Industrial Revolution to take hold. Canals – man-made rivers deep enough to take barges laden with cargo over long distances – were seen as the answer. The Duke of Bridgewater employed novice engineer James Bridley to construct a canal to carry coal from his mines in Lancashire to Manchester. Opened in 1761, it was a great success. More canals followed, resulting in a canal network that linked the major industrial centres of the country.

The Etruria Works

BRITAIN 1769

Innovative potter and abolitionist Josiah Wedgwood opened his Etruria factory beside the route of the Trent and Mersey Canal. Though incomplete at the time, Wedgwood saw the value of canal transport to distribute his products. And inside the factory, he introduced methods that greatly increased worker output. Wedgwood broke down the potter's skills – throwing, shaping, firing and glazing – allocating each task to a specialist worker. This was 'division of labour', a method of production later copied in numerous industries.



Celebrated potter Josiah Wedgwood

Industrial Revolution timeline

The heat is on
A coke-fuelled blast furnace is developed by Abraham Darby. Smelting iron ore becomes cheaper, greatly improving production of cast iron goods.
1709

Shuttle work
Wool-mill manager John Kay invents the flying shuttle. The device weaves yarn mechanically rather than by hand.
1733

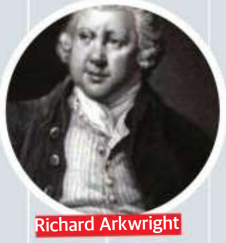
Spinning jenny model at Museum of Early Industrialisation, Wuppertal, Germany

In a spin
The invention of the spinning jenny is credited to James Hargreaves.
1764

Engines, engines everywhere
In collaboration with Matthew Boulton, Watt begins the manufacture of steam engines in Birmingham, England.
1774

Donkey work
The functions of the spinning jenny and the water frame are combined by Samuel Crompton into one machine. It's called a spinning mule.
1779

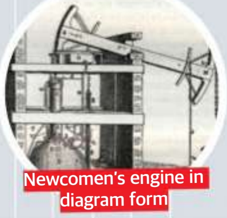
Worlds collide
Richard Arkwright sees the potential of Watt's engines. He is among the first cotton-mill owners to use one for production.
1786



Richard Arkwright

1709 1720 1750 1760 1770 1780

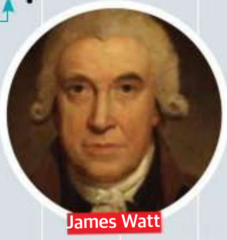
Head of steam
Thomas Newcomen builds his atmospheric steam engine – the first commercially successful such machine – used to pump water from deep coal mines. **1712**



Newcomen's engine in diagram form

Just add water
Following collaborations with others, Richard Arkwright patents his water frame. It is a spinning device powered by a water wheel. **1769**

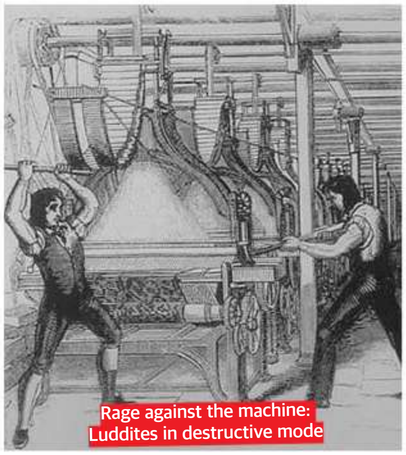
Enter James Watt
Adding refinements, such as a separate condensing chamber, to Newcomen's machine, Scottish inventor Watt designs a more efficient steam engine.
1769



James Watt

Watt again
Further experiments lead James Watt to adapt his steam engine. He changes its up-and-down pump motion to a rotary motion for more efficiency. **1781**

Loom for improvement
Another textile industry innovation comes from inventor Edmund Cartwright when he makes the power loom to aid weaving.
1785

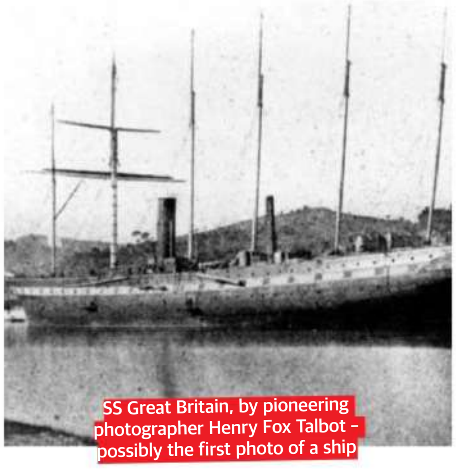


Rage against the machine: Luddites in destructive mode

The Luddite riots

BRITAIN 1811-1815

The Industrial Revolution brought change, but also unrest. Skilled workers facing job losses by the drive to mechanisation began breaking into factories to smash up machines. The mythical King Ned Ludd was the supposed Luddite leader. The rioting became so bad that the government passed a law making machine-breaking a crime punishable by death.



SS Great Britain, by pioneering photographer Henry Fox Talbot – possibly the first photo of a ship

Brunel's Great Britain

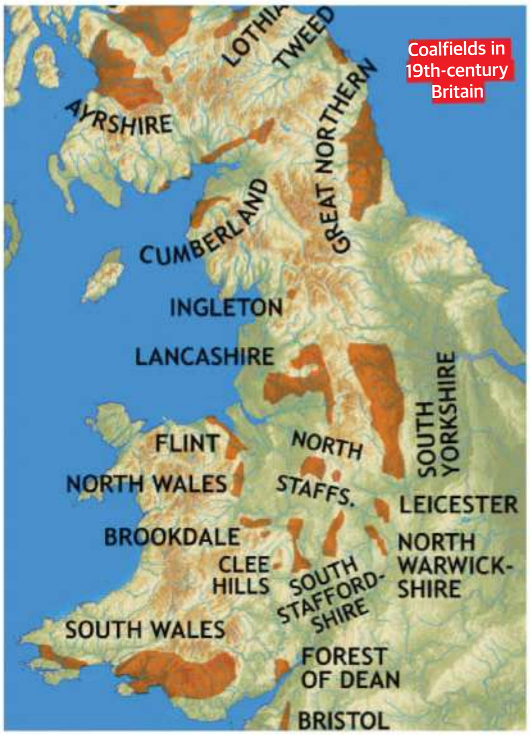
BRITAIN 1843

The achievements of civil engineer Isambard Kingdom Brunel were astounding. One of his finest was to design the SS Great Britain. The vessel is considered to be the forerunner of modern ships because it was the first to combine three elements; it was built of metal, it was powered by engine, and it was driven by a screw propeller. Launched in 1843, it was the longest passenger ship in service until 1854. It survives today as a visitor attraction in Bristol.

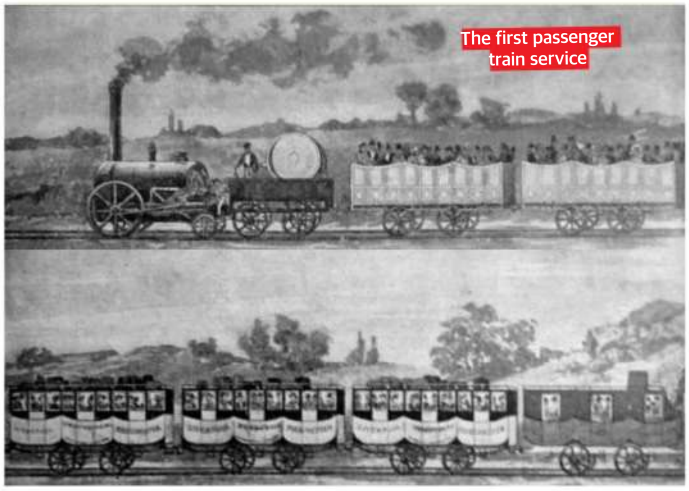
FUEL OF THE INDUSTRIAL REVOLUTION

BRITAIN 1900

As the number of steam engines and furnaces grew, the demand for coal increased rapidly. It was in plentiful supply in Britain, though changing from surface extraction to deep-shaft mining was necessary to expand production. Mining coal was dangerous, with mine owners often ruthlessly exploiting a workforce that included women and children until the 1842 Mining Act. Nevertheless, coal production continued to climb - 10 million tons were mined in 1800, that figure rising to over 200 million tons by 1900.



Coalfields in 19th-century Britain



The first passenger train service

The train takes the strain

BRITAIN 1830

The 56 kilometres (35 miles) of track between Liverpool and Manchester was the first successful railway line in Britain. Opened in 1830, it was designed to carry paying passengers as well as cargo. It made the transportation of goods and raw materials between industrial Manchester and the seaport of Liverpool cheaper and easier, signalling the end of the line for canal transport.

Across the globe
In the USA, Eli Whitney makes the cotton gin. The 'engine' separates seeds from raw cotton, which was previously done by hand. **1794**

A cotton gin displayed at Eli Whitney Museum, Connecticut

Spark of genius
The principle of electromagnetic induction is discovered by Michael Faraday. His research demonstrates that electricity can become of practical technological use. **1831**

Michael Faraday

Man of steel
The first cost-efficient process for converting pig iron into steel is patented by inventor and engineer Henry Bessemer. **1854**

A shining light
Prolific inventor Thomas Edison refines the light bulb into a reliable, long-lasting light source. His entire electric utility system soon follows. **1879**

One of Edison's first demonstration light bulbs

The Wright stuff
Brothers Wilbur and Orville Wright build and fly the first controlled, powered aeroplane. Orville pilots their Flyer for 12 seconds. **1903**

1790 1800 1820 1840 1860 1880 1900 1908

Replica of Trevithick's locomotive at the National Waterfront Museum, Swansea

The locomotion
Three years after demonstrating his Puffing Devil steam carriage, Richard Trevithick runs a steam locomotive on rails at a Wales ironworks. **1804**

Need for speed
Robert Stephenson, son of George Stephenson, wins a speed trail contest with his 'Rocket' steam engine. **1829**

A stitch in time
Improving on Elias Howe's lockstitch sewing device, Isaac Singer develops the first truly practical, successful sewing machine. **1851**

Let's talk
Despite claims from Elisha Gray, Scottish-born scientist Alexander Graham Bell is credited with inventing the telephone. **1876**

Driven to succeed
German mechanical engineer Karl Benz, spurred on by wife Bertha, develops the first practical car powered by an internal combustion engine. **1885**

The 1885 Benz Patent Motorwagon

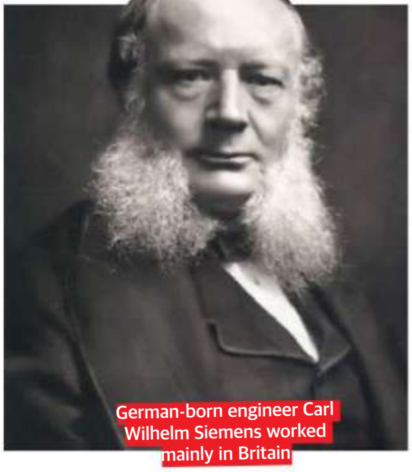
Mass production, mass consumption
The Model T car is manufactured by Henry Ford. It is affordable for many due to assembly-line mass-production methods. **1908**

Part of Babbage's analytical engine displayed at the Science Museum, London

The first computer

BRITAIN 1837

Many engine designs from the Industrial Revolution were never built. Perhaps the most astonishing device not constructed at the time was the analytical engine of Charles Babbage. His vision was for a huge brass, steam-powered, mechanical digital computer. Only much later, when modern-day computer designers began development, did it become clear that Babbage had anticipated almost every aspect of their work.



German-born engineer Carl Wilhelm Siemens worked mainly in Britain

Bulk steel production

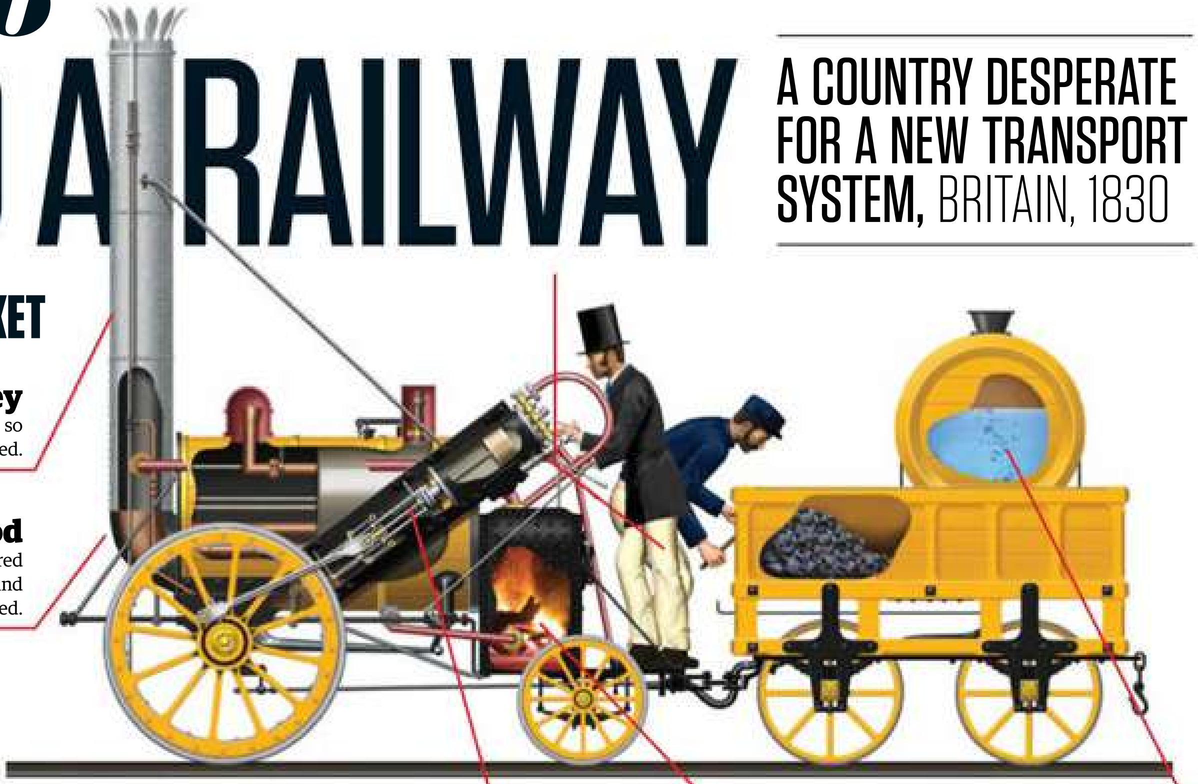
BRITAIN 1865

Steel output increased greatly when Bessemer's converter method was improved by the open-hearth process. Devised by Carl Wilhelm Siemens and developed by Pierre-Emile Martin, it was easier to control and allowed for large amounts of scrap iron and steel to be melted and refined. Bulk steel production from the Siemens-Martin process meant a greater use of steel in construction.

How to BUILD A RAILWAY

A COUNTRY DESPERATE FOR A NEW TRANSPORT SYSTEM, BRITAIN, 1830

STEPHENSON'S ROCKET



Chimney
The tubes feed into the chimney so that the hot gases can be expelled.

Connecting rod
Movement of the pistons is transferred to the wheel via a connecting rod, and forward motion is achieved.

Cylinder
Steam from the heated water in the boiler passes into the cylinders, where it forces movement of the piston within.

Firebox
The Rocket's firebox is separate from the boiler. Hot gases from the fire pass through the boiler via 25 copper tubes.

Boiler
Using 25 tubes to heat water in the boiler is a very clever innovation. They greatly increase the amount of steam.

Fed up with the slow and costly canal system, industrialists wanted to receive and distribute their materials and goods quicker. To help their cause, the affluent were not going to reject the idea of travelling the country in something other than a horse and carriage either. The time was right for something new, something no one had thought possible before. The time was right to imagine an entirely original form of transport – the railways!

01 Secure backing for the project

You might have the ideas but you probably won't have the money, because financing a new form of transport is expensive. Luckily, merchants and industrialists, the instigators of change, are far from poor, and will encourage further investment from family and business contacts. They'll also have friends in Parliament to help secure government approval.

02 Identify and survey your route

People and products want to be moved from A to B. It is your role to devise the best route for doing it, so you must study and survey the landscape. There will be settlements to swerve, rivers to cross and hills to avoid – or tunnel through! Remember, gradients are the enemy! Steam locomotives are improving, but the flatter your line, the better.

5 DISTINCTIVE GWR FEATURES

PADDINGTON STN
1854
Designed by Brunel, the glass-roof structure supported by three wrought-iron arches is considered an architectural masterpiece.

WHARNCLIFFE VALLEY VIADUCT
1837
The viaduct carries the railway across the Brent Valley. It was the first to be built with hollow piers.

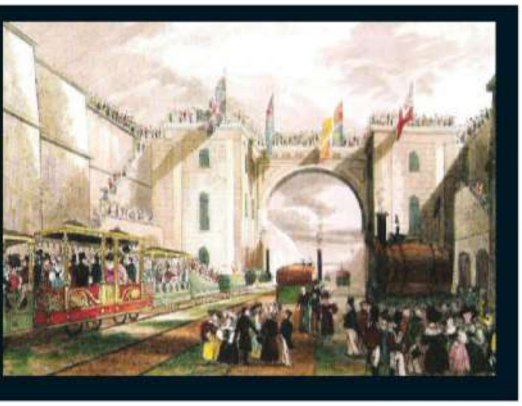
THAMES BRIDGE
1839
Two brickwork arches form the bridge across the river at Maidenhead. They were the flattest, widest arches of any bridge when constructed.

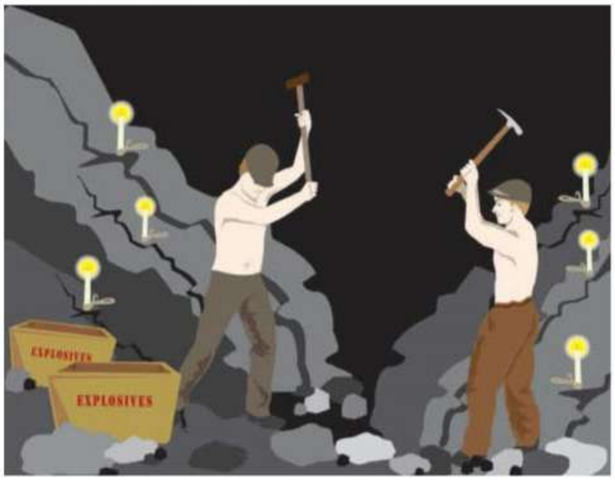
SONNING CUTTING
1840
The route through Sonning Hill was hand-dug over two years, with spoil removed in wheelbarrows and horse-drawn carts.

BOX TUNNEL
1841
Considered an impossible engineering task when begun in 1839, the tunnel under Box Hill is 2.9km (1.8mi) long.

How not to… behave at a railway opening

William Huskisson, MP for Liverpool, was among the honoured guests at the opening of the Liverpool to Manchester Railway in 1830. The event began with a number of locomotives leaving Liverpool in convoy. The lead engine, with Prime Minister the Duke of Wellington on board, stopped about halfway along the route at Parkside Station. Dignitaries were asked not to leave their respective trains, but Huskisson did so to speak to Wellington. He approached the Duke's carriage and they shook hands. Distracted, however, Huskisson was unaware of an approaching engine on the adjacent line. This was Stephenson's Rocket, and when Huskisson saw it he panicked. He attempted to clamber into the carriage, but fell in front of the engine. One of Huskisson's legs was completely crushed. He was taken by train to Eccles and received medical attention, but died shortly after, earning him dubious notoriety as the first passenger killed on a public railway.





03

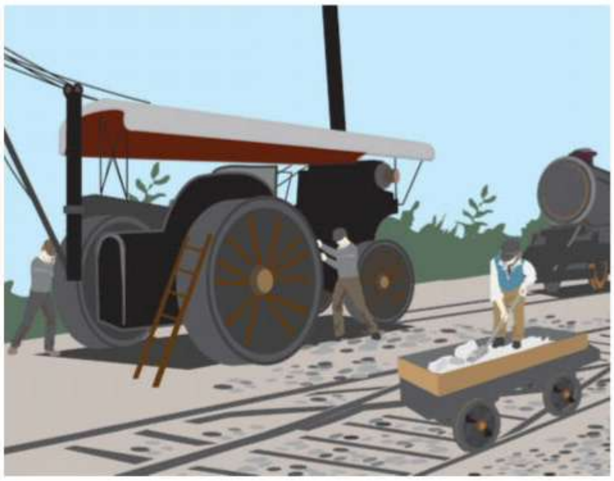
Build bridges and tunnels

Some natural obstacles cannot be avoided, so your line will inevitably have to go over or under them. Bridges and viaducts to span valleys, although challenges in themselves, are relatively straightforward compared to 19th-century tunnelling. Longer stretches require bore holes, along with a force of thousands of brave workers.

04

Gauge it correctly

Time to lay rails, but how wide should they be? Other railway projects are underway; it benefits everyone if your line can connect with them. Surprisingly, the brilliant engineer Brunel erred when choosing a wide gauge for his Great Western Railway. At considerable cost, his original track was fully converted to the standard gauge - 143.5cm (4.7ft) - in 1892.



05

Engines and rolling stock

Robert Stephenson's Rocket has just won a competition to find the best engine. Better buy your first engines from his company, then. They'll need maintenance and repairs, so a railway works is a good idea. You can even start to build your own engines and rolling stock there. Position it well and it will contribute enormously to your line's success.

CUT THE COMMUTE-CATCH THE
EVENING EXPRESS!

06

Create an iconic train

Once the line is up and running, strive to improve, offering passengers and companies sending cargo a fast and reliable service. Operating a unique express train will help build your brand. For example, clever marketing saw the GWR London to Exeter express renamed the Flying Dutchman after the horse that won the Derby and St Ledger races in 1849.

4 FAMOUS… RAIL SERVICES

PACIFIC RAILROAD

1869, USA

This line ran from San Francisco to Iowa. Before it was built, travellers would have to risk life and limb crossing deserts, mountains and rivers to get to their destination.

TRANS-SIBERIAN

1891, RUSSIA

Built to encourage development in Siberia, the Trans-Siberian Railway is the longest in the world at 9,289km (5,772mi) long.

FLYING SCOTSMAN

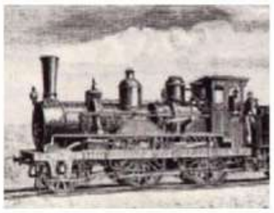
1862, BRITAIN

The first express train service between Edinburgh and London took 10.5 hours. Now it takes less than half that time.

ORIENT EXPRESS

1883, FRANCE

This name of this long-distance service has become synonymous with luxury travel and intrigue. Passengers boarding in Paris could travel as far as Istanbul.



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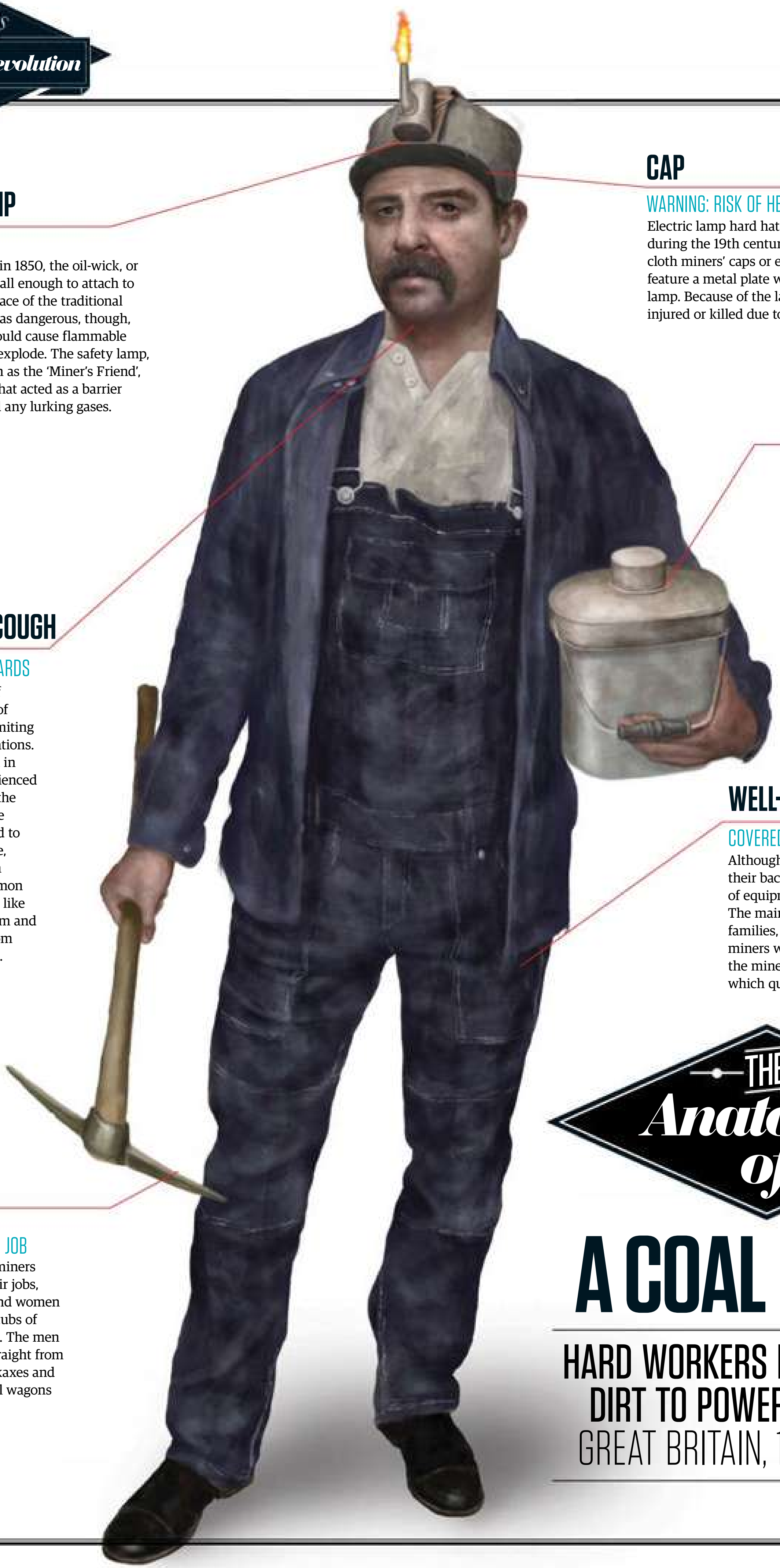
THE Anatomy of A COAL MINER

HARD WORKERS DIGGING IN THE DIRT TO POWER THE NATION

GREAT BRITAIN, 19TH CENTURY



OIL-WICK LAMP

SMALL BUT DEADLY

Invented in Scotland in 1850, the oil-wick, or 'teapot' lamp, was small enough to attach to the miners' caps in place of the traditional candle. This was just as dangerous, though, as the naked flame could cause flammable gases in the rocks to explode. The safety lamp, which became known as the 'Miner's Friend', featured wire gauze that acted as a barrier between the heat and any lurking gases.

CAP

WARNING: RISK OF HEADACHE

Electric lamp hard hats were not invented until 1914, so during the 19th century the hats worn by miners were either cloth miners' caps or everyday felt hats. Early versions would feature a metal plate with a small hole for a candlestick or lamp. Because of the lack of protection, many miners were injured or killed due to head injuries.

LUNCH BOX

PERFECT FOR A CANDLELIT LUNCH

All miners would carry a metal snap tin attached to their belt to take their lunch down into the pit. Cornish versions would feature multiple compartments, with a section filled with tea that could be heated, another with the main course and the last with a dessert. Some variations even had a teacup attached to the lid.

PERSISTENT COUGH

OCCUPATIONAL HAZARDS

Miners were at risk of developing a variety of dangerous and life-limiting illnesses and deformations. Children who worked in the mine often experienced stunted growth, and the long days down in the depths could also lead to curvature of the spine, crippled legs and skin irritations. Most common of all were conditions like bronchitis, rheumatism and black lung disease from exposure to coal dust.

WELL-WORN CLOTHES

COVERED IN SOOT, MUD AND GREASE

Although coal miners were paid well for their backbreaking work, fines and the cost of equipment could eat into their wages. The main focus was providing food for their families, so clothing was not a priority. Most miners would wear their everyday attire in the mines - a pair of overalls and a shirt - which quickly became dirtied and ruined.

TOOLS

PICKING THE RIGHT EQUIPMENT FOR THE JOB

The tools carried by miners would depend on their jobs, with older children and women working to push the tubs of coal around the mine. The men would cut the coal straight from the coalface with pickaxes and then load it into small wagons with shovels.

© Kevin McGivern

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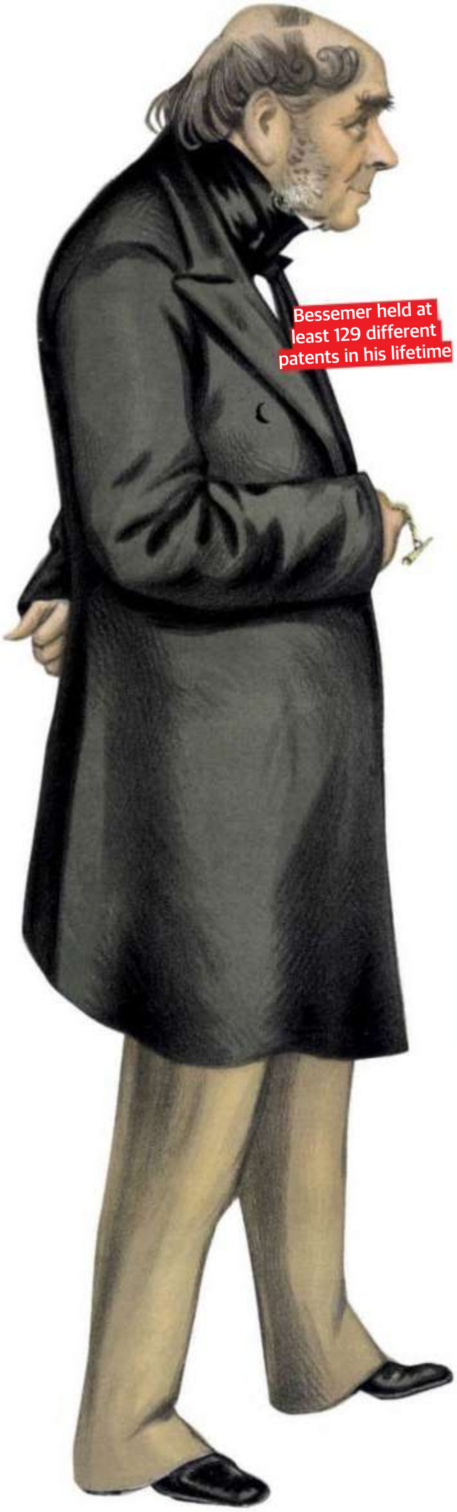
INDUSTRIAL PIONEERS

Meet the giants of industry who transformed a land of fields into the modern world of iron and big business

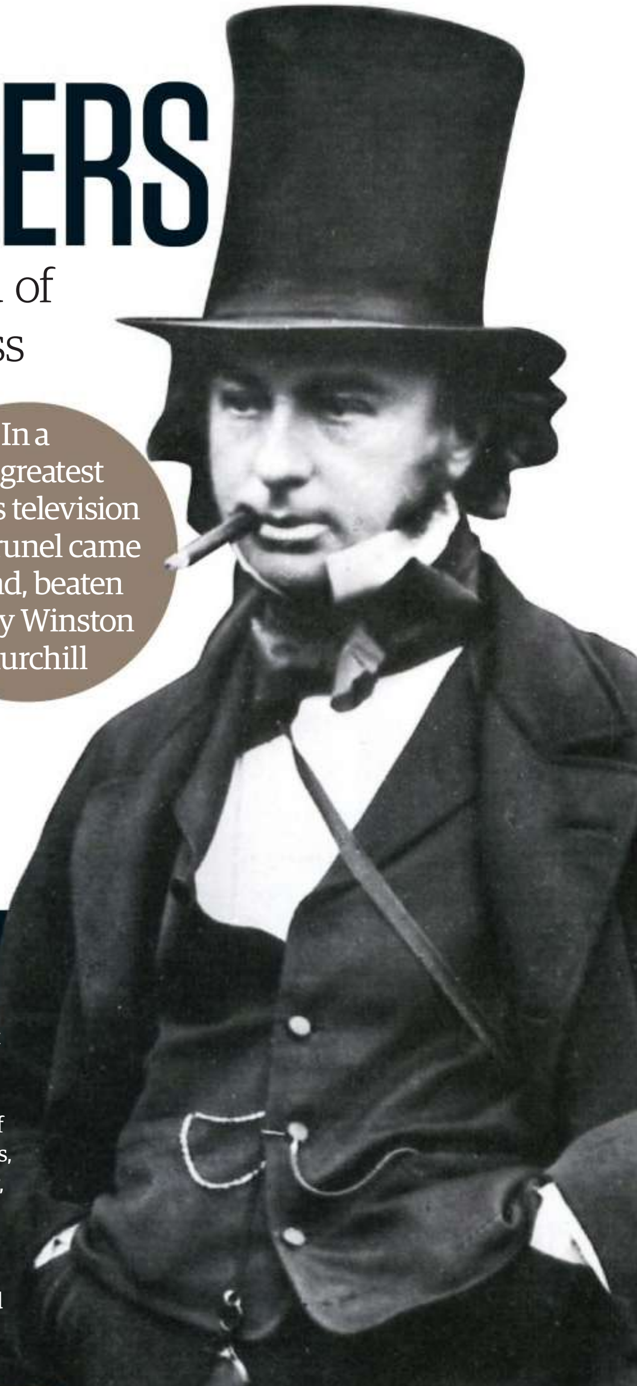


Bessemer held at least 129 different patents in his lifetime

HENRY BESSEMER

ENGLISH 1813-1898

The material that defines the industrial revolution is undoubtedly steel. It was not until a particular process was developed that steel was able to be mass-produced. This process is known as the Bessemer process, and the man behind it was Henry Bessemer. Bessemer's process involved creating steel by using molten pig iron, which allowed large and cheap production. This innovative development allowed the expansion of many key industries such as the railway line, and was key to industrial development not only in Britain but America as well.



In a 100 greatest Britons television poll, Brunel came second, beaten only by Winston Churchill

ISAMBARD KINGDOM BRUNEL

ENGLISH 1806-1859

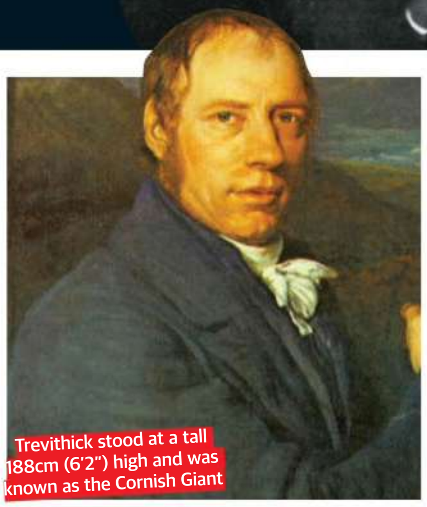
There are many names associated with the development of railways, but none carry as much weight as Isambard Kingdom Brunel. The son of French engineer Mark Isambard Brunel, Brunel was appointed chief engineer of the Great Western Railway and built a network of tunnels, bridges and viaducts. Brunel was an engineering pioneer, achieving many solutions to long-standing problems, such as building a railway under a navigable river. He also extended his skills into creating steamships and revolutionised naval engineering. Brunel's innovation led to the biggest bridges and speediest ships the world had ever seen, allowing Britain to grow, develop and trade in ground-breaking new ways.

Richard Trevithick

ENGLISH 1771-1833

Hardly a star student, Trevithick struggled at school, but went on to become a major pioneer of the Industrial Revolution. Contemporary steam engines were low-pressure, but when Trevithick became engineer at the Ding Dong Mine in 1796 he pioneered the use of high-pressure steam. Although he was not the first to think of high-pressure steam, he was the first in the country to make it work, and his engines were used for raising ores from mines.

Trevithick also built a full-scale working steam locomotive. However, Trevithick died in poverty, with local factory workers raising money for his funeral.



Trevithick stood at a tall 188cm (6'2") high and was known as the Cornish Giant

James Hargreaves

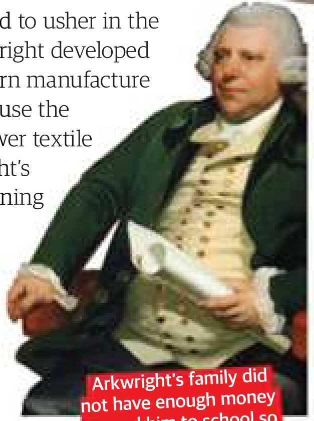
ENGLISH 1720-1778

The mechanization of the textile industry was a major force behind the Industrial Revolution. James Hargreaves contributed massively to this empire with his creation known as the spinning jenny. When the demand for cotton yarn outstripped the capabilities of the one-thread spinning wheel, Hargreaves created a multi-spindle spinning frame that could work eight or more spools at once. Hargreaves set up shop in Nottingham – a centre of the textile industry – where his invention quickly found success and popularity.

Richard Arkwright

ENGLISH 1732-1792

A figure so influential he is known by many as 'the Father of the Industrial Revolution', Arkwright's inventions and ingenuity helped to usher in the industrial age. Arkwright developed new processes in yarn manufacture and was the first to use the steam engine to power textile machinery. Arkwright's innovation in combining power, machinery and labour led to the creation of the modern factory and the boom of the British cotton textile industry.

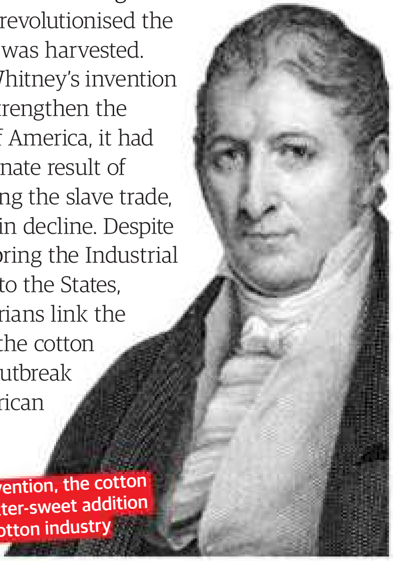


Arkwright's family did not have enough money to send him to school so he was taught to read and write by his cousin

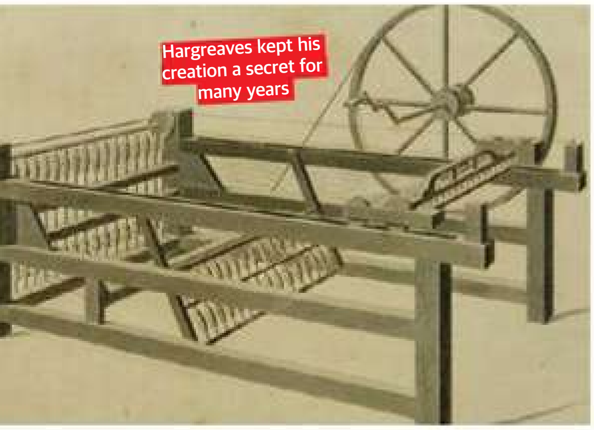
ELI WHITNEY

AMERICAN 1765-1825

While the industrial revolution was blasting full steam ahead in Britain, America too was experiencing the start of its own industrial revolution, and one of the key figures of that revolution was Eli Whitney. It was Whitney's invention of the cotton gin that completely revolutionised the way cotton was harvested. Although Whitney's invention helped to strengthen the economy of America, it had the unfortunate result of reinvigorating the slave trade, which was in decline. Despite helping to bring the Industrial Revolution to the States, many historians link the creation of the cotton gin to the outbreak of the American Civil War.

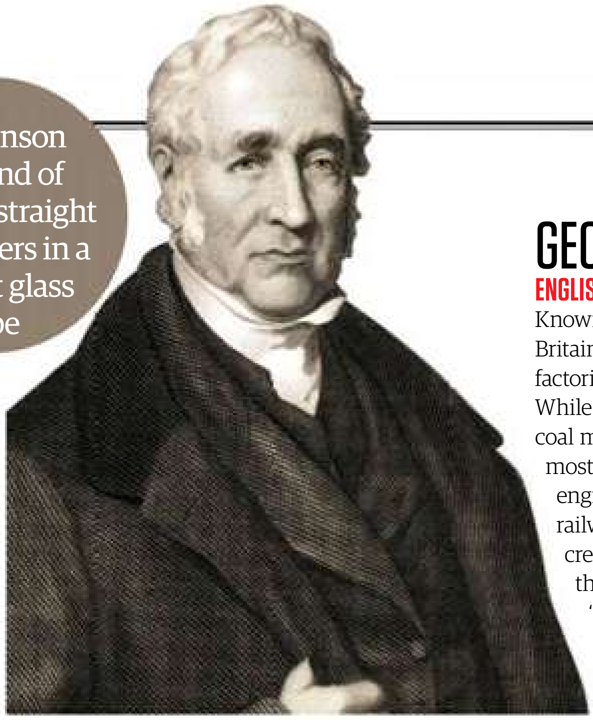


Whitney's invention, the cotton gin, was a bitter-sweet addition to the cotton industry



Hargreaves kept his creation a secret for many years

Stephenson was fond of growing straight cucumbers in a straight glass tube



GEORGE STEPHENSON

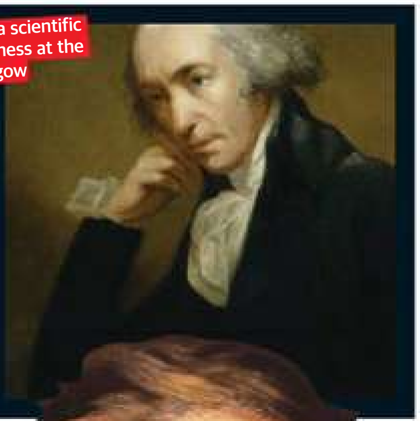
ENGLISH 1781-1848

Known as the 'Father of Railways', Stephenson saw Britain develop from a land of farms into one of factories, contributing hugely to the transformation. While Stephenson created a safety lamp for use in coal mines, known as a 'Geordie', he is remembered most for his innovations on the railway. A skilled engineer, Stephenson created the first public railway line to use steam locomotives (and created the locomotives as well), and even drove the first train. The success of his locomotive 'Rocket' inspired countless constructions of railway lines and locomotives across the country, helping make Britain the wealthiest country in the world.

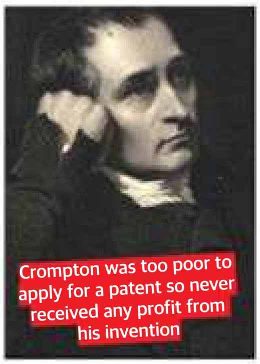
JAMES WATT

SCOTTISH 1736-1819

Although the unit of measurement 'Watt' is named in his honour, it was his improvements in steam technology that brought Watt fame and success. While working as an engineer, Watt was sent a steam engine to repair. When reassembling it, he devised a way to make it more efficient. He designed a separate condensing chamber that reduced steam loss. With his new design, Watt began to manufacture engines, and his company soon became the most important engineering firm in the country. The efficiency brought by Watt's machines was fundamental in bringing the Industrial Revolution worldwide.



Watt's first business was a scientific instrument repairing business at the University of Glasgow



Crompton was too poor to apply for a patent so never received any profit from his invention

Samuel Crompton

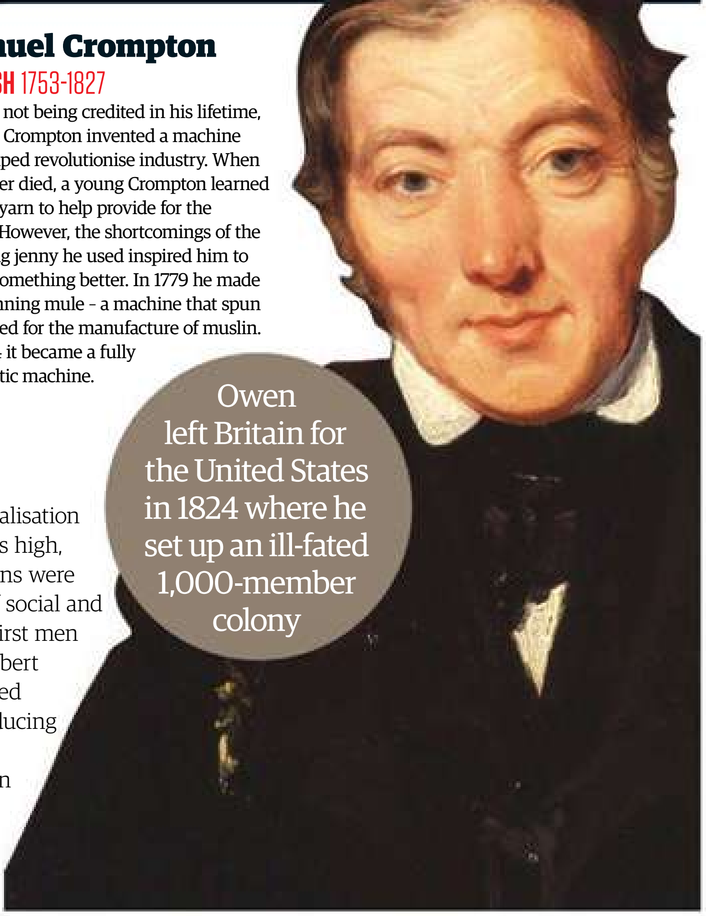
ENGLISH 1753-1827

Despite not being credited in his lifetime, Samuel Crompton invented a machine that helped revolutionise industry. When his father died, a young Crompton learned to spin yarn to help provide for the family. However, the shortcomings of the spinning jenny he used inspired him to create something better. In 1779 he made the spinning mule – a machine that spun yarn used for the manufacture of muslin. By 1834 it became a fully automatic machine.

ROBERT OWEN

WELSH 1771-1858

With the rapid increase of industrialisation during the revolution, demand was high, pay was low and working conditions were terrible. This prompted a period of social and economic reform, and one of the first men to consider worker welfare was Robert Owen. His pioneering work included shortening the working day, introducing a minimum wage, improving his workers' living conditions and even creating the first national union. While Owen's union collapsed, his ideas helped develop the modern cooperative movement.



Owen left Britain for the United States in 1824 where he set up an ill-fated 1,000-member colony

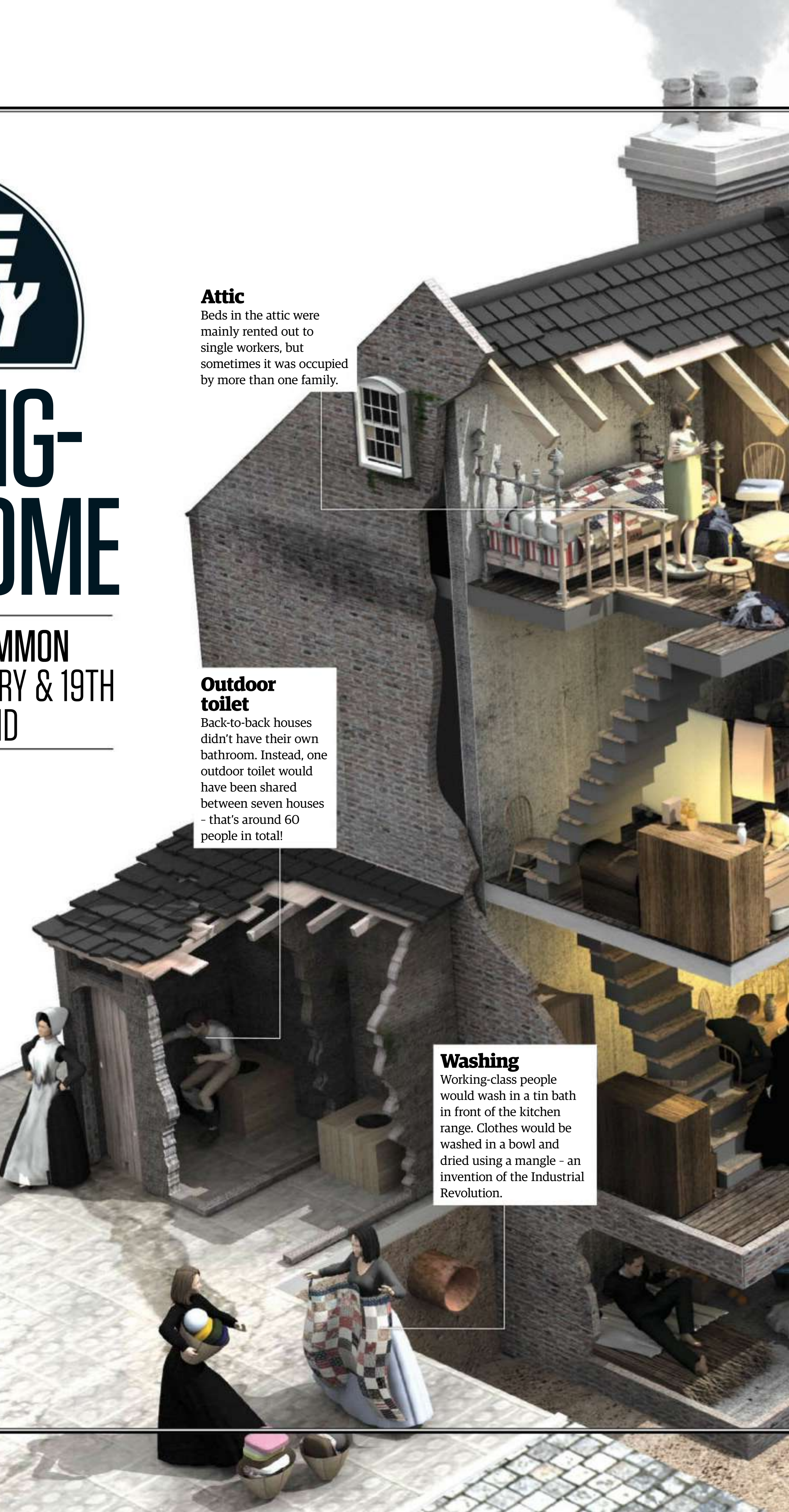
© Alamy

INSIDE HISTORY

WORKING-CLASS HOME

HOW TO LIVE LIKE COMMON PEOPLE, LATE-18TH CENTURY & 19TH CENTURY, ENGLAND

The Industrial Revolution saw a huge influx of workers from the countryside to the cities, over a very short space of time. The cities needed more affordable housing – and they needed it fast. The solution was back-to-back houses. These were small, terraced homes where around nine adults and children lived, slept and ate together in incredibly cramped conditions. With few building regulations, houses were often poorly constructed and suffered from damp and bad drainage. Those who could only afford cellar dwellings lived in the worst conditions, as damp would seep to the lowest part of the house, and basements were often flooded by overflowing cesspools.

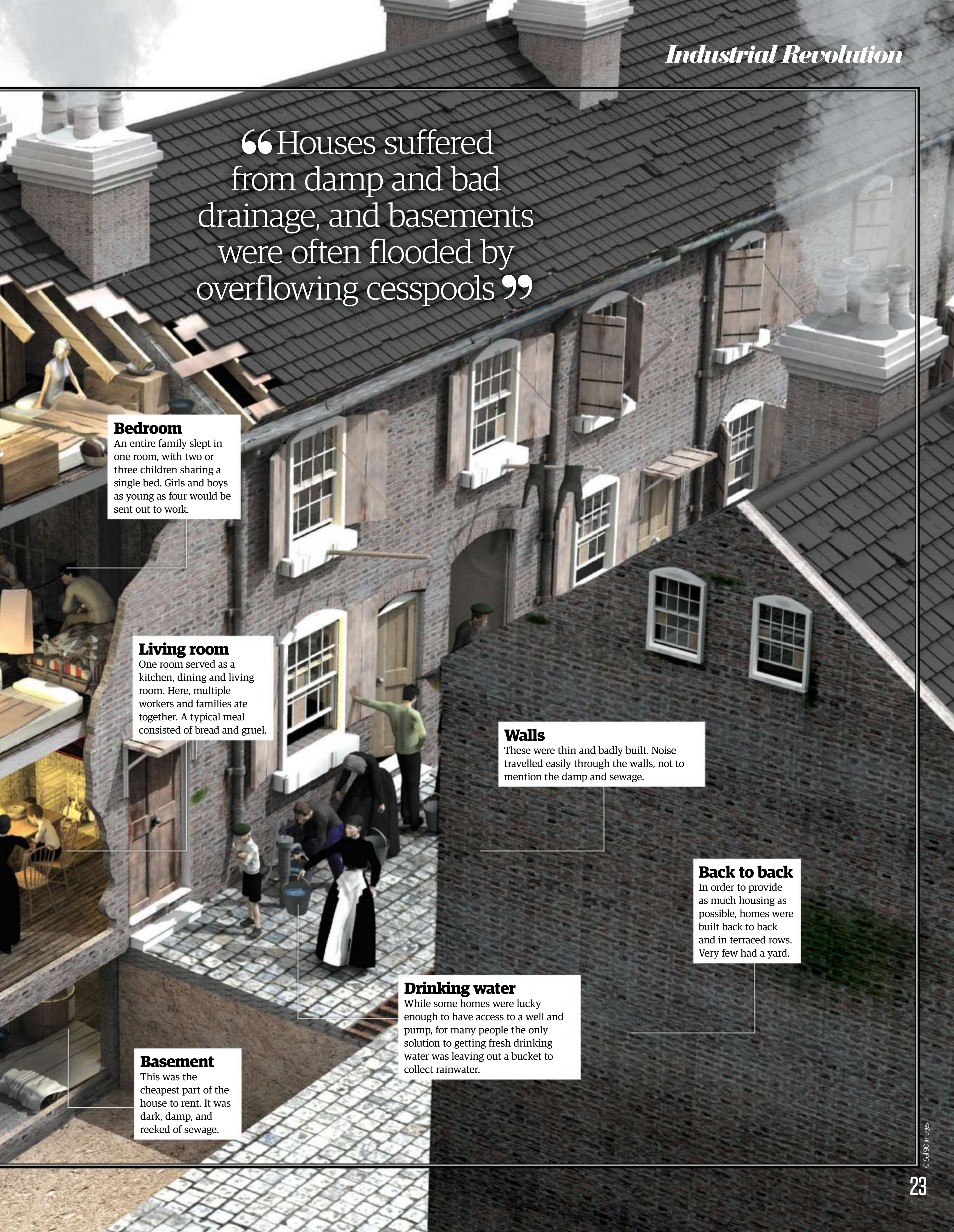


Attic
Beds in the attic were mainly rented out to single workers, but sometimes it was occupied by more than one family.

Outdoor toilet
Back-to-back houses didn't have their own bathroom. Instead, one outdoor toilet would have been shared between seven houses – that's around 60 people in total!

Washing
Working-class people would wash in a tin bath in front of the kitchen range. Clothes would be washed in a bowl and dried using a mangle – an invention of the Industrial Revolution.

> “Houses suffered from damp and bad drainage, and basements were often flooded by overflowing cesspools”



Bedroom
An entire family slept in one room, with two or three children sharing a single bed. Girls and boys as young as four would be sent out to work.

Living room
One room served as a kitchen, dining and living room. Here, multiple workers and families ate together. A typical meal consisted of bread and gruel.

Walls
These were thin and badly built. Noise travelled easily through the walls, not to mention the damp and sewage.

Back to back
In order to provide as much housing as possible, homes were built back to back and in terraced rows. Very few had a yard.

Drinking water
While some homes were lucky enough to have access to a well and pump, for many people the only solution to getting fresh drinking water was leaving out a bucket to collect rainwater.

Basement
This was the cheapest part of the house to rent. It was dark, damp, and reeked of sewage.

© Sol 90 Images

Top 5 facts

CHARLES DICKENS

CELEBRATED WRITER FOR ALL SOCIAL CLASSES

01 POLITENESS WAS NOT HIS FORTE

Hans Christian Andersen deeply admired Dickens, and even dedicated a book to him. But when Andersen stayed with Dickens and his family in 1857, he may have overstayed his welcome, as Dickens inscribed on the guest room mirror: "Hans Andersen slept in this room for five weeks which seemed to the family AGES!"

CHARLES DICKENS

English,

7 February 1812 - 9 June 1870

Brief Bio

Known as the greatest Victorian novelist, Dickens experienced a difficult start in life as he was forced to leave school and work in a factory when his father was thrown in prison. Wildly popular in his life and today, his novels such as *Hard Times* portray a dark, critical view of the industrial revolution, and the pain it wrought upon common people.

02 Dickens wasn't only a writer

As well as being a writer, Dickens was also an enthusiastic conjurer. He performed his magic show on the Isle of Wight for a group of friends and gave himself the stage name, 'The Unparalleled Necromancer Rhia Rhama Rhoos, educated cabalistically in the Orange Groves of Salamanca and the Ocean Caves of Alum Bay'.

03 He was a hero

When Dickens was involved in a train derailment, he evacuated his carriage and tended to the wounded for hours. He comforted the dying with brandy and a hat filled with water, while also saving some lives. He only just remembered to retrieve his manuscript for *Our Mutual Friend* before he left the scene.

04 People were obsessed with reading his books

Well before *Harry Potter*, Dickens's novels created mania among the population. People gathered at the docks to await chapter 71 of *The Old Curiosity Shop* and demanded the ship's captain reveal the protagonist's fate, which apparently produced a collective groan.

05 Death and corpses fascinated him

Dickens was obsessed with corpses and death, considering it the ultimate, most threatening mystery. He often spent time visiting morgues to study corpses and commented "Whenever I am at Paris, I am dragged by invisible force into the morgue." He even spent one Christmas and New Year's day there.

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COMMEMORATIVE GUERNSEY STAMPS

The Life of Winston Churchill

NEW ISSUE:
Miniature Sheet: **£3.00**
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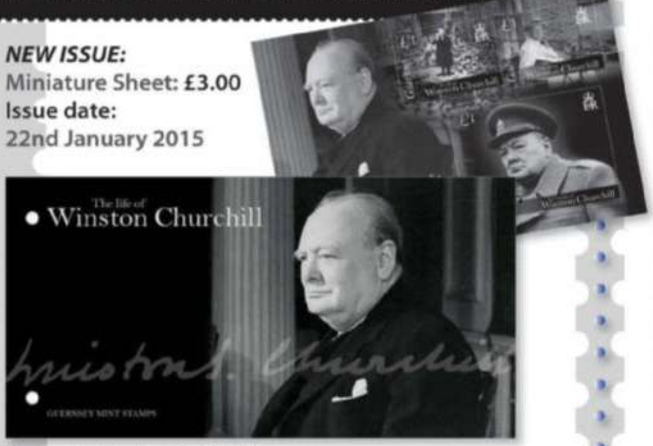

Presentation Pack: **£3.90**

The presentation pack is an attractive way of displaying this unique miniature sheet.

The sheet is placed inside a protective holder and placed inside the presentation pack. Incorporated in the pack are further details on Winston Churchill and the specifications of the stamps and sheet.

Winston Churchill celebrated in stamps.

Politician, celebrated speaker, painter and respected author, few would argue that Churchill enjoyed a most interesting life.

From his birth at Blenheim Palace in Oxfordshire on November 30th, 1874, to his death 50 years ago on January 24, 1965, his life was one of action, controversy, setback and achievement.

During the Second World War the Channel Islands were the only part of the British Isles to be invaded and occupied by German forces. Then, after five long years, on 8 May 1945 at 10 o'clock, the people of Guernsey were informed by the German authorities that the war was over. Churchill made a radio broadcast at 3pm and announced that:

> *'Hostilities will end officially at one minute after midnight tonight (Tuesday, May 8)... and our dear Channel Islands are also to be freed today.'*

The miniature sheet (above left) is a wonderful way to collect and keep a memento on one of the greatest wartime leaders of the 20th century.

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Day in the life

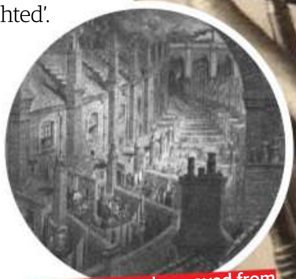
A CHILD LABOURER

RISKING LIFE AND LIMB TO BRING HOME A PITTANCE, GREAT BRITAIN, 19TH CENTURY

A British census conducted in 1841 reported that almost 107,000 children were employed in the textile industry alone. The reason for this sudden boom in child labour was no mystery. As industry moved from the fields to the factories, families poured into the cities to find employment. For the factory owners, children were the obvious choice for their new workforce; not only were they small enough to move under the machines, but they could also get away with paying them less than adults, though their workload was equal. Although laws were eventually passed, child labour continued in Europe well into the 20th century.

GO TO WORK

All children would need to be at the mill at 6am, and 5am during busy periods. One form of punishment for tardiness was to be 'weighted'. This involved a heavy weight being tied to the offender's neck, then they were forced to walk up and down the factory. There were even cases of children being dragged to the factory naked, holding their clothes, to ensure they would not be late even by a minute.



The families who moved from the country to the cities were forced to live in cramped and polluted conditions

WORK TIRELESSLY

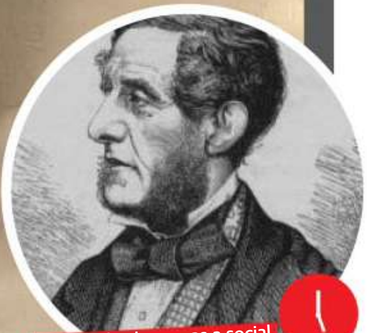
Tasks appointed to children varied depending on their size, gender and age. The youngest and smallest children would work as scavengers, squeezing under the machinery while it was still in motion to pick up scraps of cotton that had fallen to the floor. 'Piercers' were small girls who mended broken threads. The most common employment of children was to keep the machines oiled, working and supplied with thread.

EAT LUNCH

Child labourers would only get 30 minutes to eat lunch. Because they would need a lot of energy, their diet was high in carbohydrates. Common foods were oatcakes, porridge, gruel and beer. Meanwhile, water would be difficult to get because much of it was polluted, and milk and dairy products were often too expensive.

> "Anyone who was found disobeying these rules or slacking would be brutally punished"

11-year-old Nannie Coleson made $3 a week as a looper in the Crescent Hosiery Mill, Tennessee, at the start of the 20th century



Lord Shaftesbury was a social reformer who campaigned for children's rights during the Industrial Revolution

GET AN INJURY

The Industrial Revolution filled the factories with large, heavy and dangerous new equipment. Although these machines increased efficiency, they posed great danger to the children who worked with them. Not only did the heavy amount of dust encourage respiratory diseases, but children would also suffer stunted growth and severe back pain. Those working in mills could bruise, skin or even lose their fingers on the dangerous machinery. It wasn't until the Factory Act of 1833 that conditions began to improve.

COLLECT WAGES

The most attractive thing about child workers is that they were far cheaper than their adult alternatives. As there was no legislation in place, child wages varied widely during the Industrial Revolution. On average child workers were paid about ten to 20 per cent of the equivalent adult's wages - while men could earn 15 shillings (75 pence) a week, children earned just three shillings (15 pence).

ATTEMPT ESCAPE

Many of the children who worked in these dangerous factories were orphan apprentices who received no wages, but instead were paid in inadequate food, shelter and clothing. Because sometimes these orphans would attempt to escape, they were locked up when not working. Any children who did run away could be sent to prison, and rebellious would-be runaways had shackles riveted to their ankles to prevent any further chance of escape.

RECEIVE PUNISHMENT

Factories operated with a very strict set of rules, and anyone who was found disobeying these rules or slacking would be brutally punished. Verbal abuse and beatings by supervisors were very common, and there were reports of children being beaten so brutally that they later died as a result of their injuries. A brutal punishment for girls proud of their hair was haircutting, and children found slacking were held by their legs and dipped into cisterns filled with water.

WORK INTO THE NIGHT

Child labourers would often work until nine or ten at night; on Saturdays they could even work until midnight. When the 1833 Factory Act was passed, set working hours finally came into effect, with children aged nine to 13 only allowed to work eight hours, 14 to 18-year-olds no more than 12 hours, and those under nine were prohibited from working at all. This also brought compulsory education of two hours a day into effect.

How do we know this?

Child Workers And Industrial Health In Britain by Peter Kirby deals specifically with the occupational health of children employed in the factories during the period, while *Childhood And Child Labour In The British Industrial Revolution* by Jane Humphries provides an account of working-class childhood. The investigations carried out prior to the passing of the Factory Acts provide clear information about the appalling conditions children were working in. There is also a wealth of interviews with child labourers of the time, most notably those interviewed for the *Lion* newspaper.

Childhood and Child Labour in the British Industrial Revolution

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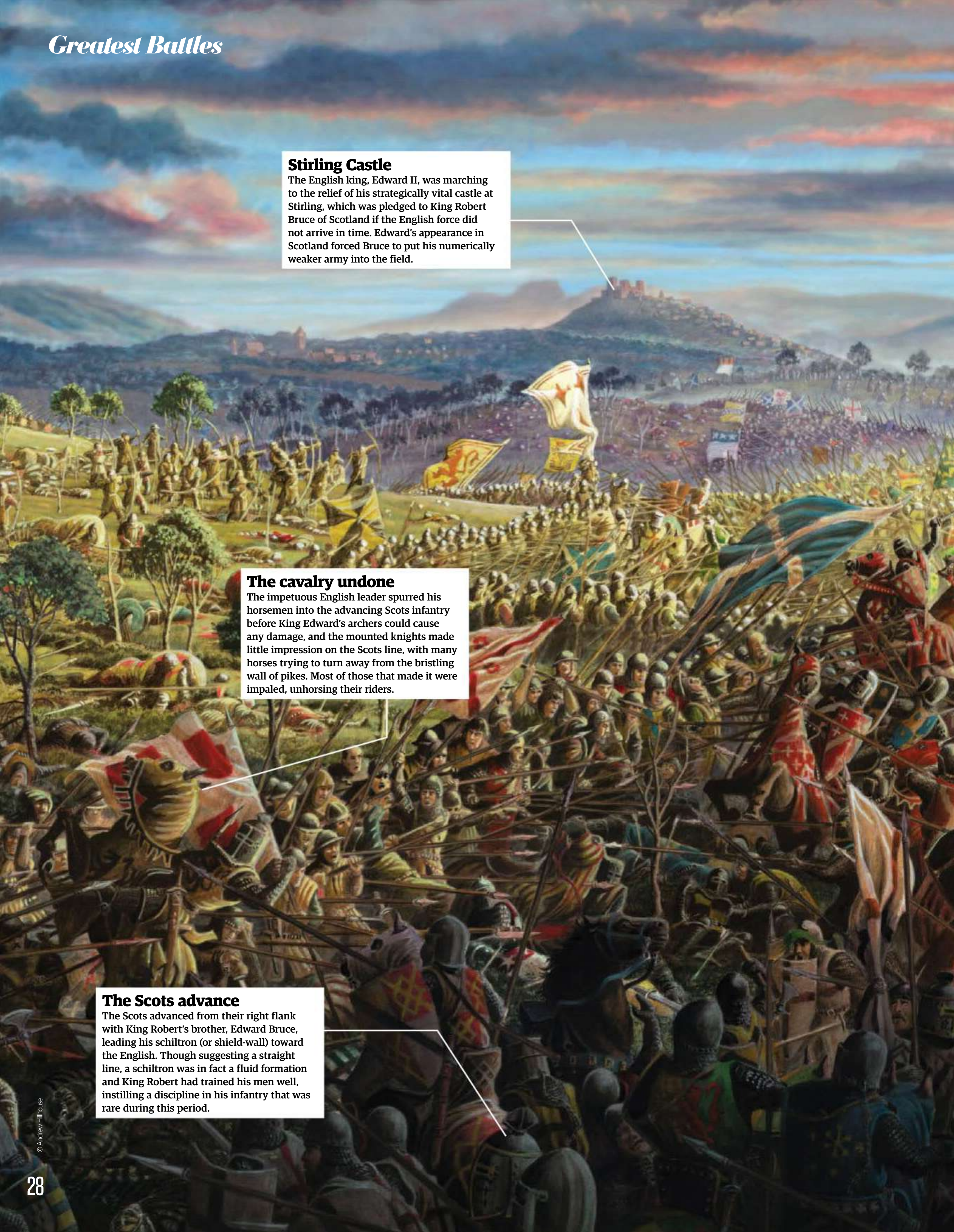


Stirling Castle

The English king, Edward II, was marching to the relief of his strategically vital castle at Stirling, which was pledged to King Robert Bruce of Scotland if the English force did not arrive in time. Edward's appearance in Scotland forced Bruce to put his numerically weaker army into the field.

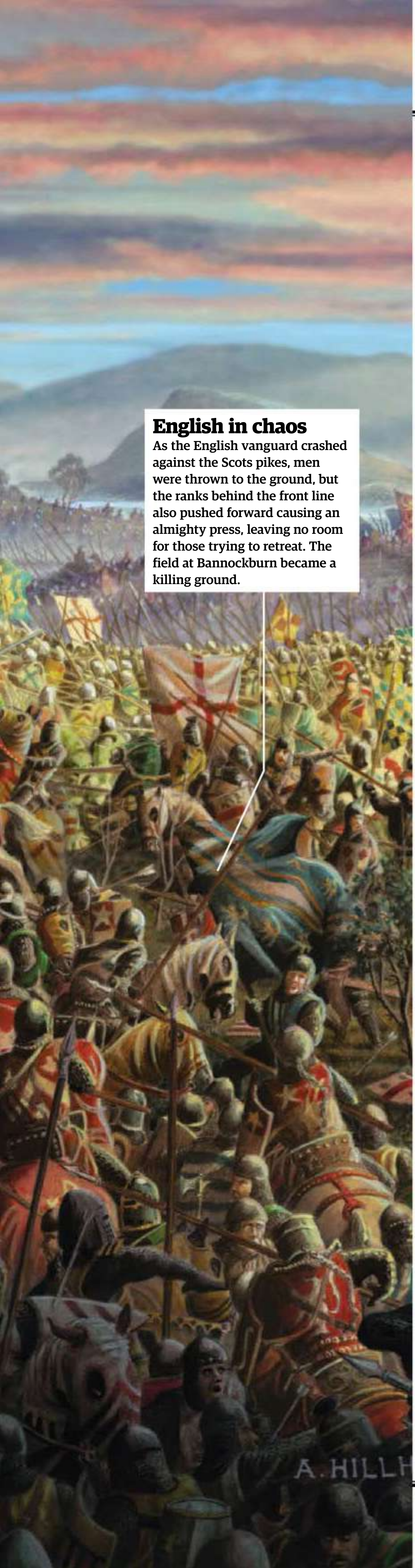
The cavalry undone

The impetuous English leader spurred his horsemen into the advancing Scots infantry before King Edward's archers could cause any damage, and the mounted knights made little impression on the Scots line, with many horses trying to turn away from the bristling wall of pikes. Most of those that made it were impaled, unhorsing their riders.

The Scots advance

The Scots advanced from their right flank with King Robert's brother, Edward Bruce, leading his schiltron (or shield-wall) toward the English. Though suggesting a straight line, a schiltron was in fact a fluid formation and King Robert had trained his men well, instilling a discipline in his infantry that was rare during this period.

© Andrew Hillhouse



English in chaos
As the English vanguard crashed against the Scots pikes, men were thrown to the ground, but the ranks behind the front line also pushed forward causing an almighty press, leaving no room for those trying to retreat. The field at Bannockburn became a killing ground.

GREATEST BATTLES

BATTLE OF BANNOCKBURN

SCOTLAND 23-24 JUNE 1314

It was Philip Mowbray, England's custodian of Stirling Castle, who precipitated the Battle of Bannockburn in midsummer 1314. The previous year, the king of Scotland, Robert Bruce, had attacked English strongholds within his realm, his brother assaulting the strategically vital fortress at Stirling. Mowbray then offered a chivalric deal. If the Scots lifted the siege, he'd keep his men inside the castle, ceding the crossing at Stirling Bridge, thereby allowing the Scots to harangue other outposts. If no English relief force arrived within one year, Mowbray would surrender the castle.

Now, in the summer of 1314, King Edward II marched to the castle's relief and Bruce knew he must prevent their arrival. Even so - and despite psychologically important skirmish victories against Edward's vanguard on 23 June - the night before the decisive engagement at Bannockburn, Bruce was contemplating withdrawal from a strong position.

He had learned that avoiding pitched battle was the surest route to success. The English armies were larger than his own and boasted more armoured knights. Only when boosted by reports of diminishing English morale did he finally elect to face Edward on 24 June.

One of the victories on the previous day was Bruce's own. Sir Henry de Bohun had spied the Scottish king out in front of his men, his crown glittering in the sunlight. Bruce was astride his palfrey, while Bohun rode his warhorse and knew if he could strike Bruce down, the battle would be won. Bohun spurred his charger forward. Bruce carried only an axe, yet still he met his foe, nudging aside his lighter horse just as Bohun passed and bringing down the axe on his enemy's helm, splitting his skull. Bruce had struck the first blow.

24 June proved pivotal. As the English forces massed, Bruce gave the order to attack. The Scots infantry was formed in schiltrons (shield-walls), flexible phalanxes bristling with pikes that outreached the English lances. They were split into four units, with the king's brother, Edward Bruce, leading the army from the right flank. On his left came Thomas Randolph, with Douglas alongside him. Robert Bruce held his men in reserve on the left with his squadron of cavalry led by Robert Keith.

Hostilities began with an exchange of arrows, though the first clash came when the English cavalry moved forward. Gilbert de Clare, Earl of Gloucester, considered it his honour to lead the attack, though the king had given no such order. As the knights trotted up the slope toward the Scots, the impetuous Gloucester broke into a charge and soon the entire English vanguard was thundering toward the leading schiltron.

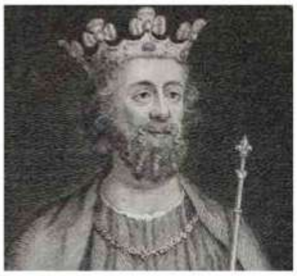
The move was a lamentable failure, the heavily armoured knights making no impression against the tightly packed pike-men, and Gloucester was among the first to fall. Horses were disembowelled and the chivalry of England unhorsed. Moray and Douglas brought their brigades forward against the remaining English divisions. Carnage ensued. Archers on the English right inflicted losses on the Scottish left, but Keith's cavalry soon dispersed them.

With the English knights in chaos and their infantry yet to engage, the Scots pressed home the advantage with the famous charges of the 'gillies', a mob of camp followers who joined Bruce's reserve. The remaining English forces broke and fled, many drowning as they sought to cross the waters of the Bannockburn. Edward II fled to Stirling as Scotland had inflicted upon England its greatest-ever defeat.

England

TROOPS 14,000

CAVALRY 3,000



EDWARD II

LEADER

Edward II inherited the Plantagenet empire of England, Wales, Gascony, Ponthieu and Aquitaine.

Strengths Had military experience in Scotland and boasted the strength of an entire empire.

Weakness A weak king and not military minded. Many of his nobles, and indeed his wife, despised him.

HEAVY CAVALRY

KEY UNIT

The 13th and 14th-century horseman was the battle tank of his day, his simple strategy to charge the enemy.

Strengths A bludgeoning charge was devastating for infantry.

Weakness Fought as individuals. Vulnerable to massed ranks of spearmen, as long as they held firm.

THE WARHORSE

KEY WEAPON

The destriers of the English cavalry were bred from French and Spanish stock and were more powerful than the palfreys used for everyday riding.

Strengths Strong enough to wear cloth and toughened leather.

Weakness Could be spooked, especially when facing bristling pikes.

01 Bruce makes his move

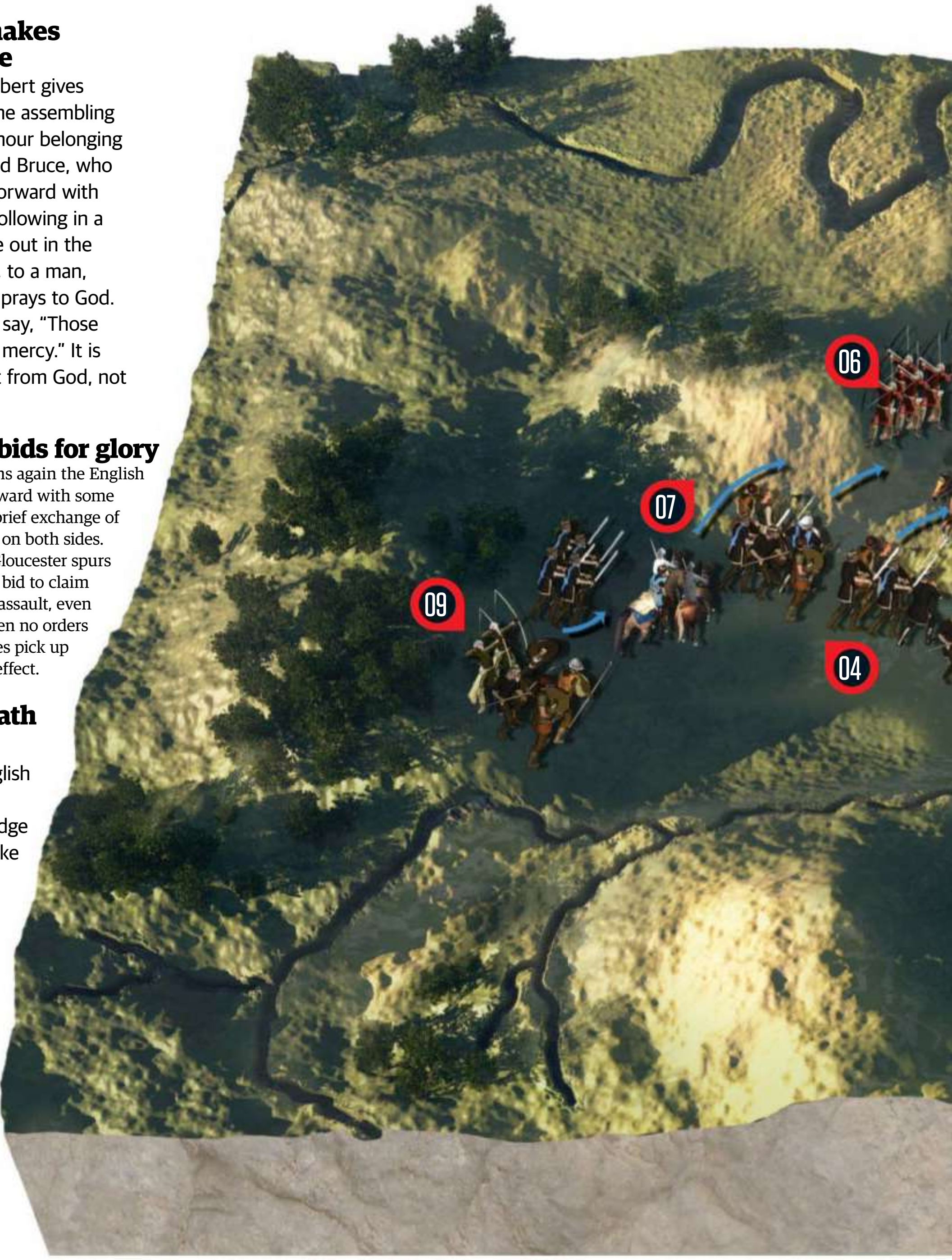
At daybreak, King Robert gives the order to attack the assembling English army, the honour belonging to his brother, Edward Bruce, who moves his schiltron forward with Moray and Douglas following in a stepped march. Once out in the open the Scots army, to a man, falls to its knees and prays to God. Edward II is heard to say, "Those men kneel to ask for mercy." It is mercy they seek, but from God, not from the English.

02 Gloucester bids for glory

As the Scots take up arms again the English cavalry begin to trot forward with some chroniclers reporting a brief exchange of arrows from the archers on both sides. The impetuous Earl of Gloucester spurs forward his destrier in a bid to claim the glory of leading the assault, even though the king has given no orders to attack. Once warhorses pick up pace, a full charge is in effect.

03 The bloodbath begins

The first wave of English horsemen crashes against the Scots' hedge of pikes and they make no impression, the air filling with cries of horses and men and the snapping of spear shafts. Some horses shy away from bristling walls of spears but such is the press, there is nowhere for them to turn. Gloucester is among the first of the great English knights slain.



04 The Scots move in

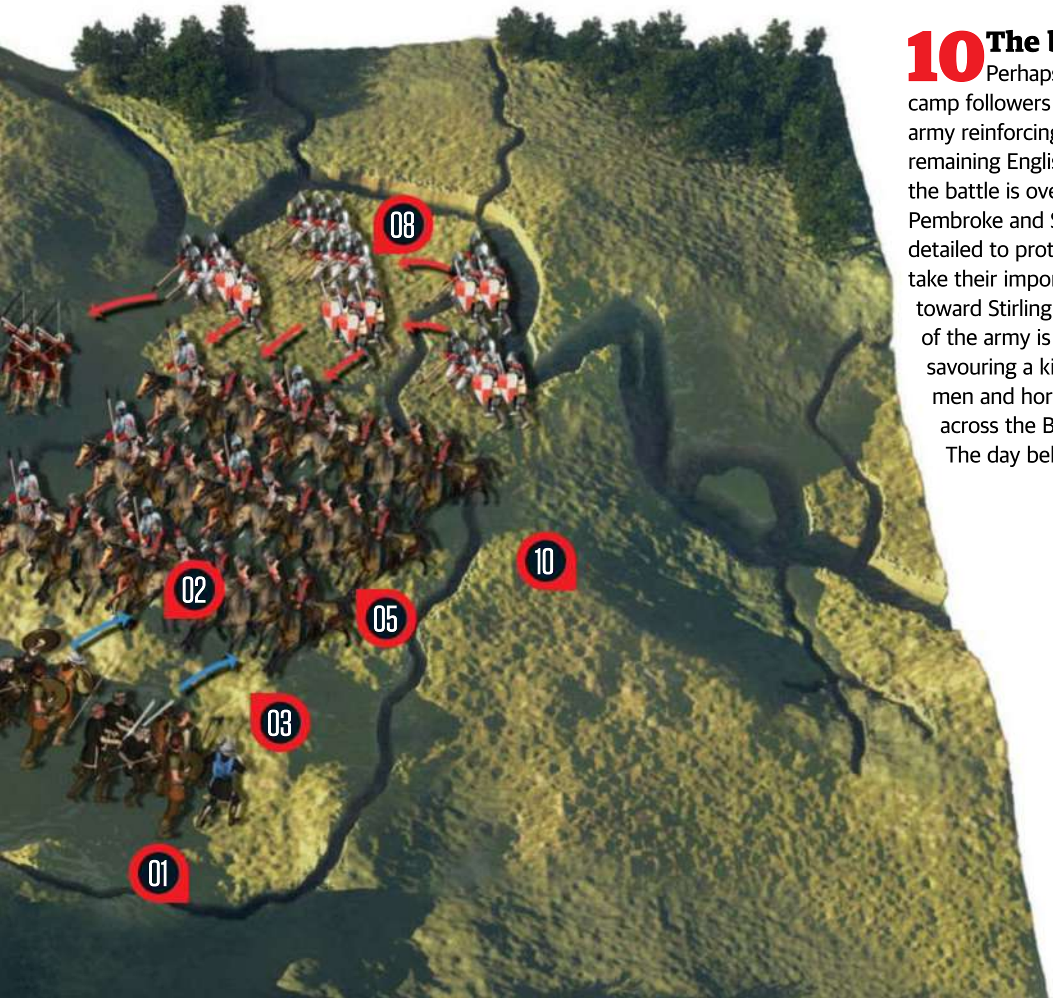
With Edward Bruce holding the English van, Moray and Douglas bring up their brigades and attack the remaining English divisions, which are thought to have bunched in a solid mass given the narrowness of the battlefield.

05 THE PRESS IS ON

In the chaos of battle, the English knights in the ranks behind Gloucester continue to push forward. A hacking and jabbing melee ensues, with the horseman having no further momentum to use their lances and proving easy targets for the Scots' hedgehogs of pikes.

06 English archers engage

Only after the English have taken terrible punishment is there room for the archers on their right to harass the left flank of the Scots. Some archers succeed only in hitting their own knights, though a barrage of arrows does begin to fall among the Scottish schiltrons.



07 Keith's cavalry assault
Robert Keith with his small contingent of horsemen proves how effective cavalry could be when used against infantry, and his charge into the English archers sends them scurrying back toward their army's rear where they are lambasted, and even attacked, by their fellow foot-soldiers.

08 INFANTRY PROVE IMPOTENT

The larger part of the English infantry does not engage at all and the vast majority remain on the opposite side of the waters of Bannockburn, unable to see a path through the massed muddle of cavalry in front.

09 The camp followers charge

With the English cavalry fighting a desperate and hopeless cause with the wrong tactics and weapons, and being pushed back onto the boggy ground behind them, the 'small folk' or camp followers, separated from the main Scots army, suddenly charge onto the battlefield. Bruce would not want serfs killing English knights who could be held for valuable ransom, but they bowl into the melee with their crude weaponry, no doubt eager for booty.

10 The battle is won

Perhaps sensing the charging camp followers are another Scots army reinforcing their brethren, the remaining English knights sense the battle is over and the Earl of Pembroke and Sir Giles de Argentine, detailed to protect King Edward, take their important charge north toward Stirling, while the remainder of the army is put to rout, the Scots savouring a killing spree as English men and horses clog the ford across the Bannockburn waters. The day belongs to the Scots.

FOR MORE GREAT BATTLES SEE HISTORY of WAR
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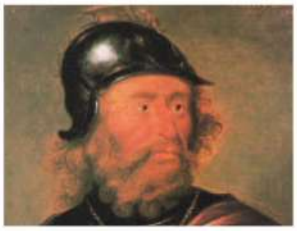
HISTORY of WAR
20 GREATEST
CHURCHILL'S SECRET ARMY

Scotland

TROOPS 6,000
CAVALRY 500



ROBERT BRUCE

LEADER

Crowned king of Scotland in 1306, Robert Bruce knew his fiscally inferior country needed to avoid pitched battles.

Strengths A master of guerrilla warfare: had a steely determination.

Weakness Many of his noblemen still preferred to ally themselves with the more powerful English king.

THE SCHILTRON

KEY UNIT

Many Scottish knights dismounted to form the nucleus at the centre of these shield walls. Plus, the Scots infantry were more used to warfare than their English counterparts.

Strengths A hedge of pikes was effective against a cavalry charge.

Weakness The schiltron was susceptible to attack from archers.

THE PIKE

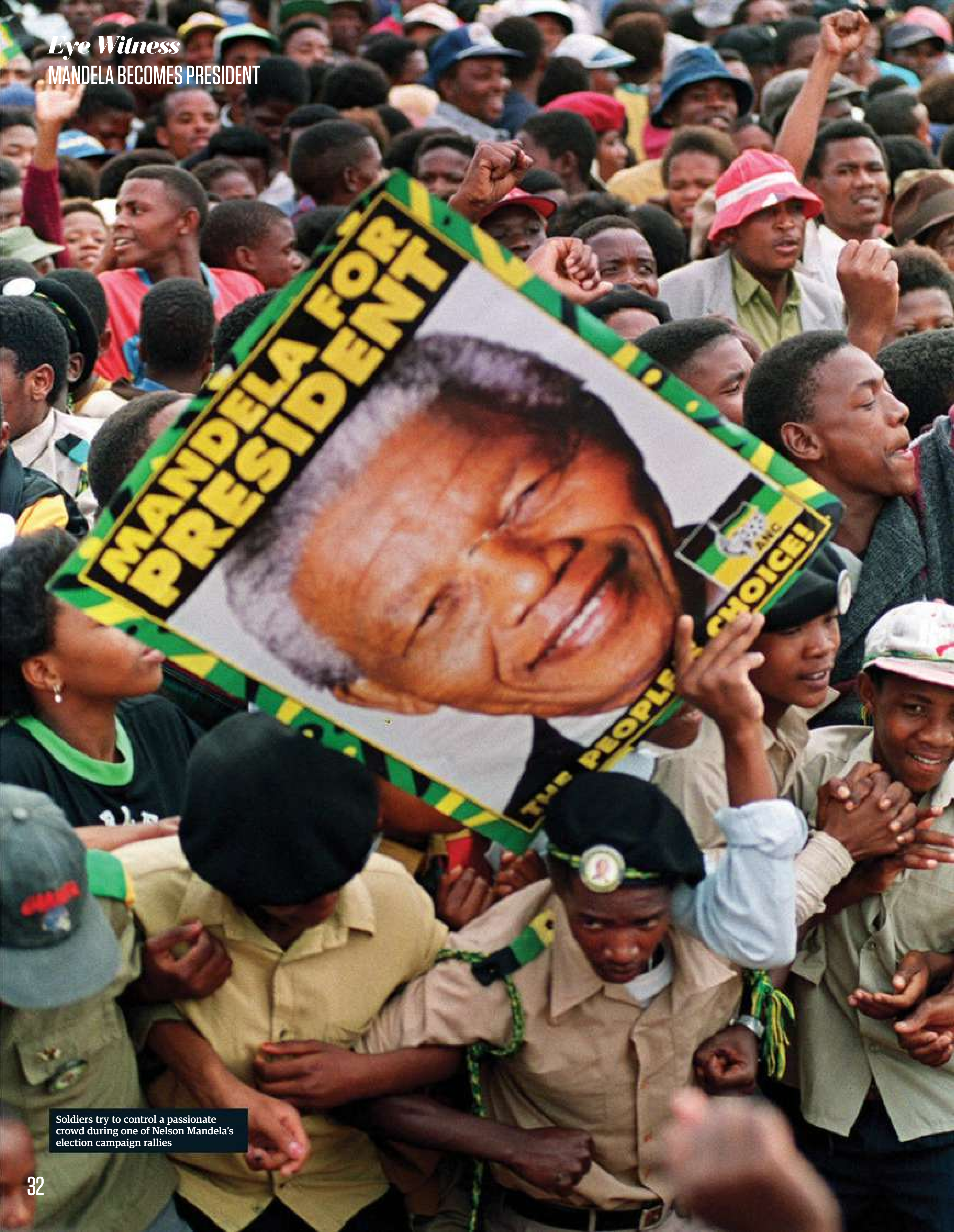
KEY WEAPON

The extra few feet offered by a pike gave the men a psychological boost and Bruce had time to train his men in their use against cavalry.

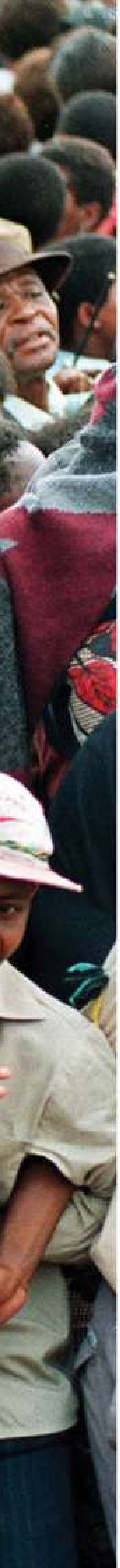
Strengths 5.5m (18ft) pike could extend further than a knight's lance.

Weakness Not every Scot in the schiltrons carried the elongated pike.

© Alamy; Thinkstock; Sayo Studio


MANDELA FOR PRESIDENT
ANC
THE PEOPL
CHOICE!

Soldiers try to control a passionate crowd during one of Nelson Mandela's election campaign rallies

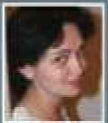


Eye Witness

MANDELA BECOMES PRESIDENT,
SOUTH AFRICA, PRETORIA, 10 MAY 1994

Written by Dom Reseigh-Lincoln

GILLIAN KERRUISH



Gillian Kerruish was born in South Africa's northern capital Pretoria in 1984 and has lived in at least half of the country's provinces. Apart from a trip to Switzerland when she was aged seven, Gillian has not left the borders of South Africa. She lives in Johannesburg, where she works as a receptionist at a law firm. She's also studying to be a sworn translator in Mandarin Chinese.

> "I knew with the absolute conviction of a child that this would be the greatest day of my entire life"

South Africa was changing. After three centuries of white government, the 25th largest country in the world was on the precipice of a new political and social age. For 46 years the ruling National Party had gripped the country in the chokehold of apartheid, a system of racial segregation that elevated the white minority Afrikaners while treating black South Africans like second-class citizens on their own soil. Sanctioned by trade embargoes and vexed by an internal resistance that wasn't averse to using violent guerrilla tactics to destabilise white control, South Africa was fast becoming a powder keg on the verge of igniting.

That change came not in the form of one man, but two. The first was Frederik Willem de Klerk, a previously conservative white member of the National Party who surprised many in government when he chose to head up the 'verligte' ('enlightened'), a new movement that believed that the apartheid had a half-life that was slowly running out. When he became state president of South Africa in September 1989, de Klerk knew that drastic action was needed to transition the country into a non-racist nation. By February 1990, he did just that - he lifted the ban on the African National Congress (ANC) and African Communist parties and released one of the country's most iconic figures. That man was Nelson Mandela. Imprisoned on charges of terrorism for 27 years, Mandela had become a symbol of South Africa's suppressed black citizens.

The unity between South Africa's progressively liberal leader and the face of black nationalism was a powerful coalition, and the two worked tirelessly to bring the nation out of the shadow of apartheid and into a new age of racial equality. Four years later, and Mandela was voted in as the head of a government that had, in a very different form, stolen his freedom 30 years earlier. It was a stark reversal of fortunes and the rest of the world waited with baited breath to see how the next chapter in South African history would play out. It was a momentous occasion and Gillian Kerruish, aged nine years old at the time, was there in person to see the country's first black head of state address the world.

"Oddly enough, while I have spent more than half my life in Cape Town, it was a sheer stroke of luck that I was living in Pretoria in 1994," says Gillian. "I was living in Cape Town, when my parents divorced. But I then moved to Pretoria with my father, enrolling at a local public school soon after. The first time I became aware of anything properly political was a few months before when the headmistress called a special assembly and told us that for the first time in our country's history we would have a fully free and fair presidential election. I was only a child so this meant nothing to me in the greater scheme of my life. But I could tell that something big had just happened."

Something big had indeed happened. So big in fact it would either unite the country or rip it apart as the more extreme elements of each racial denomination fought to gain a foothold on the country's future. When Mandela chose to run for de Klerk's own position at the beginning of 1994, he sent out a powerful statement to the world:

Mandela's road to presidency

EDT

11 Feb 1990	**Long-awaited release** Nelson Mandela, aged 71, is freed from prison after 27 and a half years of imprisonment.
Feb 1990	**The ban lifts** State president de Klerk also lifts the ban on Mandela's ANC (African National Congress).
7 Aug 1990	**Guerrilla campaign abates** The ANC suspends its campaign of guerrilla warfare against apartheid after 30 years.
5 July 1991	**Mandela leads** After a successful global tour, Mandela is unanimously elected as the leader of the ANC.
17 June 1992	**Devastation in Boipatong** 300 armed men attack the settlement of Boipatong, killing over 45 people.
10 April 1993	**Chris Hani is killed** Chris Hani, leader of the South African Communist Party is murdered by a white man.
15 Oct 1993	**Shared Nobel Peace Prize** De Klerk and Mandela accept a Nobel Peace Prize for efforts to form a multinational government.
18 Nov 1993	**A new constitution** Negotiations between white and black leaders eventually settle on a new, amended constitution.
April 1994	**An equal vote** After 46 years of apartheid, black South Africans are legally able to vote. Mandela runs for president.
27 April 1994	**Victory for ANC** With Mandela as its figurehead, the ANC wins with more than 62 per cent of the vote.
10 May 1994	**Mandela's inauguration** Mandela is sworn in as first black president of South Africa before 4,000 politicians and dignitaries.
16 June 1999	**Mbeki follows for the ANC** Thabo Mbeki succeeds Mandela in another victory for the ANC.
5 Dec 2013	**Legacy and Mandela's death** Mandela continues to campaign for international cooperation, but passes away at the age of 95.

Following the political isolation South Africa endured under the apartheid movement, Mandela understood the importance of good relations with world leaders such as US president Bill Clinton

South Africa was ready to embrace change. The general election that followed was a pivotal turning point in South African history. For the first time ever, all races could cast a vote. The election was a heated affair with three main parties in contention (the Inkatha Freedom Party led by Mangosuthu Buthelezi, the National Party led by FW de Klerk and the ANC headed up by Mandela). South Africa's political landscape had changed drastically in the five years and it was permeating every corner of society.

"During school assembly one day, our headmistress went on to congratulate the granddaughters of Madiba (this was Mandela's tribal name and was the one South Africans used most when referring to him)," recalls Gillian. "The two girls were actually at school with me at the time (although they were several grades ahead of me). The headmistress then went on to announce that several schools had been selected to provide a certain number of children to stand at the foot of the Union Building stairs. I don't know how my school selected the 20 children who went, but I was lucky enough to be one of them. It was the most exciting thing that had happened to me all year."

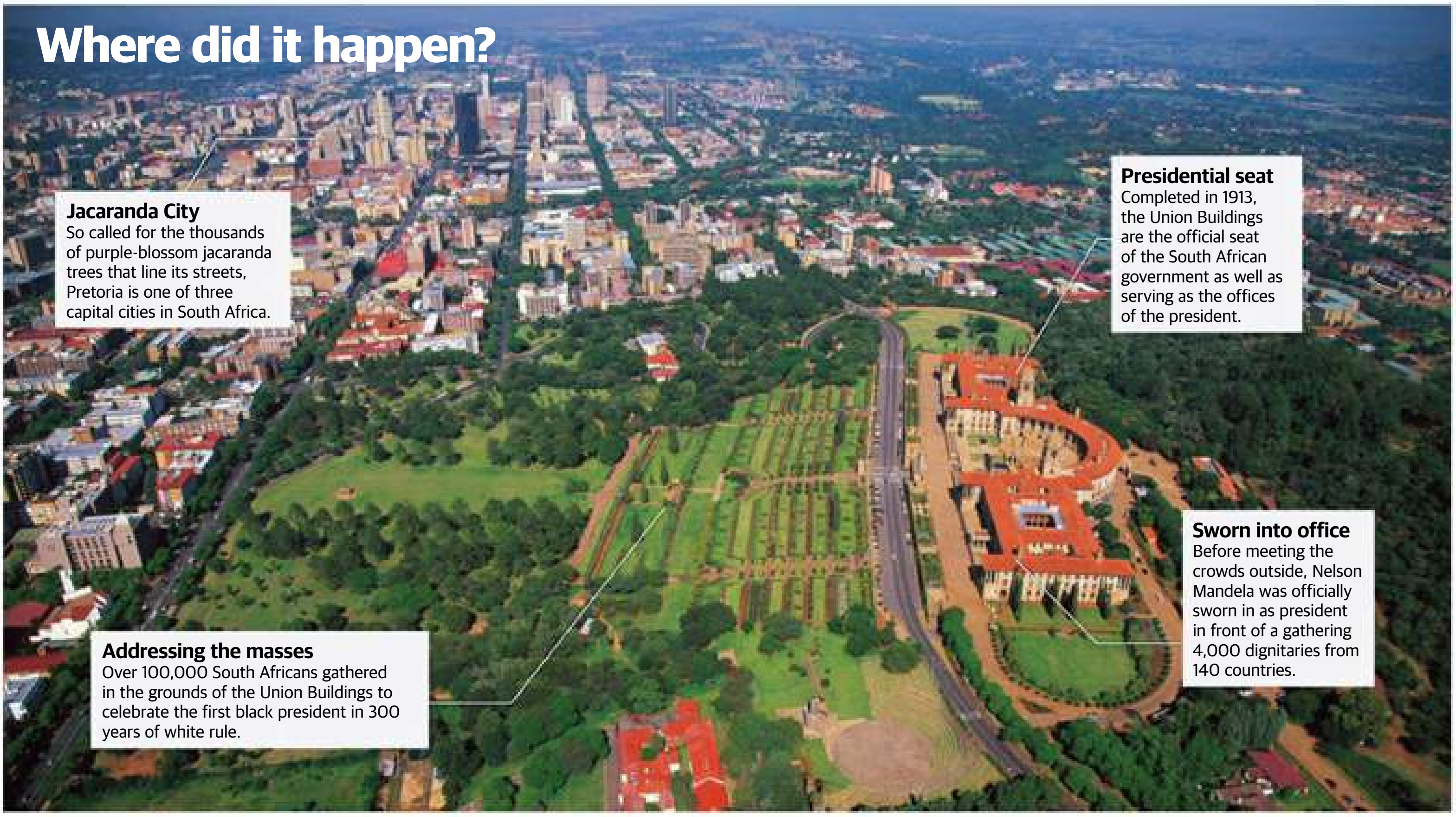
That feeling of excitement and anticipation had swept the whole nation with a record 19,726, 579 votes cast. Mandela's ANC triumphed with a powerful 62 per cent of the vote. It then formed a government of National Unity with its two political rivals and drastically reestablished the political makeup of the National Assembly (South Africa's equivalent of the House of Commons). On the morning of 10 May 1994 Mandela arrived at the Union Buildings (South Africa's governmental seat) in Pretoria and was sworn into office in front of 4,000 politicians and dignitaries from around the world. South Africans of every race and background were celebrating and Gillian can still recall it vividly.

"On the day, the organisers bussed all the selected children to a stadium nearby. There were probably only a couple hundred of us from every walk of life, but it felt like a lot more. We were lined up by height and were all wearing new T-shirts with the new South African flag, new shorts and new takkies (RSA for 'trainers'). Then we were bussed to the Union Buildings, where people in military uniforms were lining the road. The other dignitaries were already arriving, so we got an interesting view of important people that I didn't recognise at the time."

> "All I knew was that this man, climbing out of the car, was going to be someone important"

Nelson Mandela and his wife Winnie after his release from Victor Verster prison

Where did it happen?



Jacaranda City
So called for the thousands of purple-blossom jacaranda trees that line its streets, Pretoria is one of three capital cities in South Africa.

Presidential seat
Completed in 1913, the Union Buildings are the official seat of the South African government as well as serving as the offices of the president.

Sworn into office
Before meeting the crowds outside, Nelson Mandela was officially sworn in as president in front of a gathering 4,000 dignitaries from 140 countries.

Addressing the masses
Over 100,000 South Africans gathered in the grounds of the Union Buildings to celebrate the first black president in 300 years of white rule.

Stood by the stairs leading down from the front of the Union Buildings, Gillian had a front row seat to the hysteria building around her. Over 100,000 people gathered in the grounds in the front of the buildings, whooping and waving flags in anticipation for Mandela's arrival. Media outlets from across the world gathered nearby, eager to capture two unique moments: the culmination of South Africa's first true democratic election and the inauguration of its first black president. The atmosphere itself around nine-year-old Gillian was charged as Mandela approached the crowds.

"They were getting more restless and alert, making some last minute adjustments. There seemed to be more men in black suits on the road in front of us," says Gillian. "Then a black car pulled up, and the military lady in front of me stood to attention. For a second or two nothing happened, then a man in a black suit came to the car and opened the door. The black children around me were already starting to cheer and dance up and down, and I can remember wondering what they knew that I didn't because they obviously knew who this 'Madiba' person was. I was a little jealous that I had no reason to be as excited as them. All I knew was that this man, who was climbing out of the car, was going to be someone important."

"All of this became unimportant when I saw him. And the first thought I thought was: 'He looks like my oupa (RSA for 'grandfather')!' He was smiling his now famous smile, and began waving to us as we waved our flags and shouted, 'Well done, Madiba!' I knew I could trust him. I knew he was good. I knew with the absolute conviction of a child, that this would be the greatest day of my entire life," recalls Gillian fondly. "And then he was gone, whisked away by the men in suits. To be honest, I felt a little bereft that us children hadn't had more time with him. We were all sad to see him go."

Mandela would then move on and make his speech to the crowds gathered before and the rest of the watching world, citing, "the depth of the pain we all carried in our hearts as we saw our country tear itself apart in a terrible conflict," as one of the driving forces behind his campaign to lead South Africa forward. "Never again shall it be that this beautiful land will again experience the oppression of one by another and suffer the indignity of being the skunk of the world," he remarked. By appointing his predecessor de Klerk as the deputy president, Mandela helped foster a new political ecosystem for South Africa. It was far from perfect, and it would be a long and painful road to finally shake off the shadow of apartheid, but it was a journey Mandela would relish for the rest of his presidency and his life.

"When it was all done, after the speech and the awe-inspiring jet flyover, we were bussed back to school. When I got home, I realised that my father and grandmother had stayed home and watched the entire thing on TV. My father hugged me hard, and my grandmother was crying happy tears. It was at that point that I realised that, small as it was, I had become a part of history."

Have you witnessed a landmark event in history?

Tell us about it at...

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Mandela's lasting legacy

Mandela's time as South African president may have only lasted five years, but his influence as a peace activist and a symbol for national unity not only left its mark on South Africa, but the rest of the world as a whole. Upon leaving the crowds at the Union Buildings in Pretoria, a mountain of a task lay ahead of him. Mandela not only had to prove South Africa was not another rogue African state ruled by gun runners and warlords, but reassure white South Africans that the country's first black president would not spearhead a campaign of reprisals in the wake of apartheid.

By appointing his predecessor FW de Klerk as deputy president, Mandela was able to initially appease white citizens, while his reluctance to follow the elitist land reforms of Robert Mugabe's new Zimbabwean regime helped accelerate the removal of foreign sanctions. Some of Mandela's critics have accused him of sacrificing economic recovery for social reconciliation, but his reforms and legacy have no doubt helped South Africa in distancing itself from decades of damaging racial segregation.

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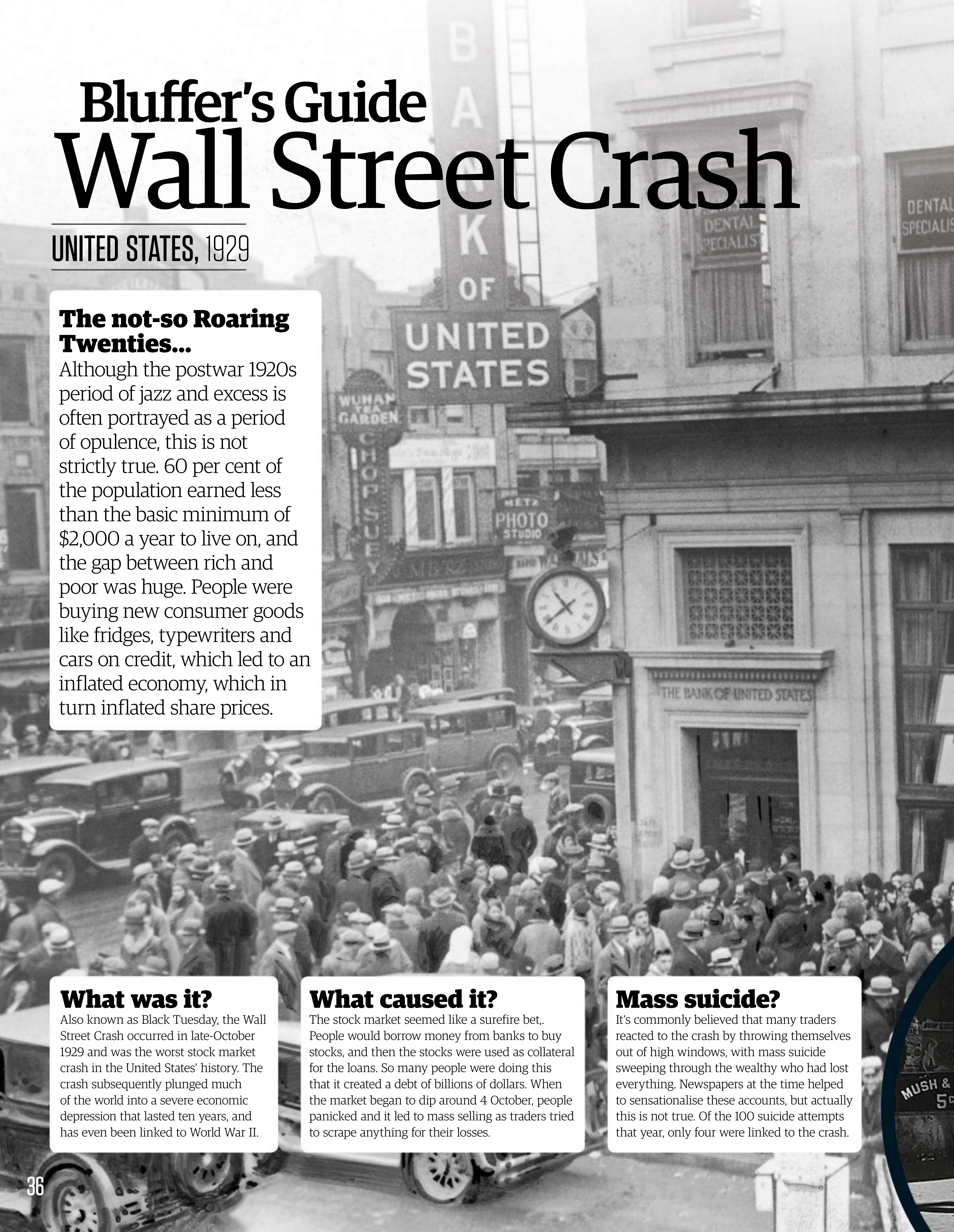
Bluffer's Guide
Wall Street Crash

UNITED STATES, 1929



The not-so Roaring Twenties...

Although the postwar 1920s period of jazz and excess is often portrayed as a period of opulence, this is not strictly true. 60 per cent of the population earned less than the basic minimum of $2,000 a year to live on, and the gap between rich and poor was huge. People were buying new consumer goods like fridges, typewriters and cars on credit, which led to an inflated economy, which in turn inflated share prices.

What was it?

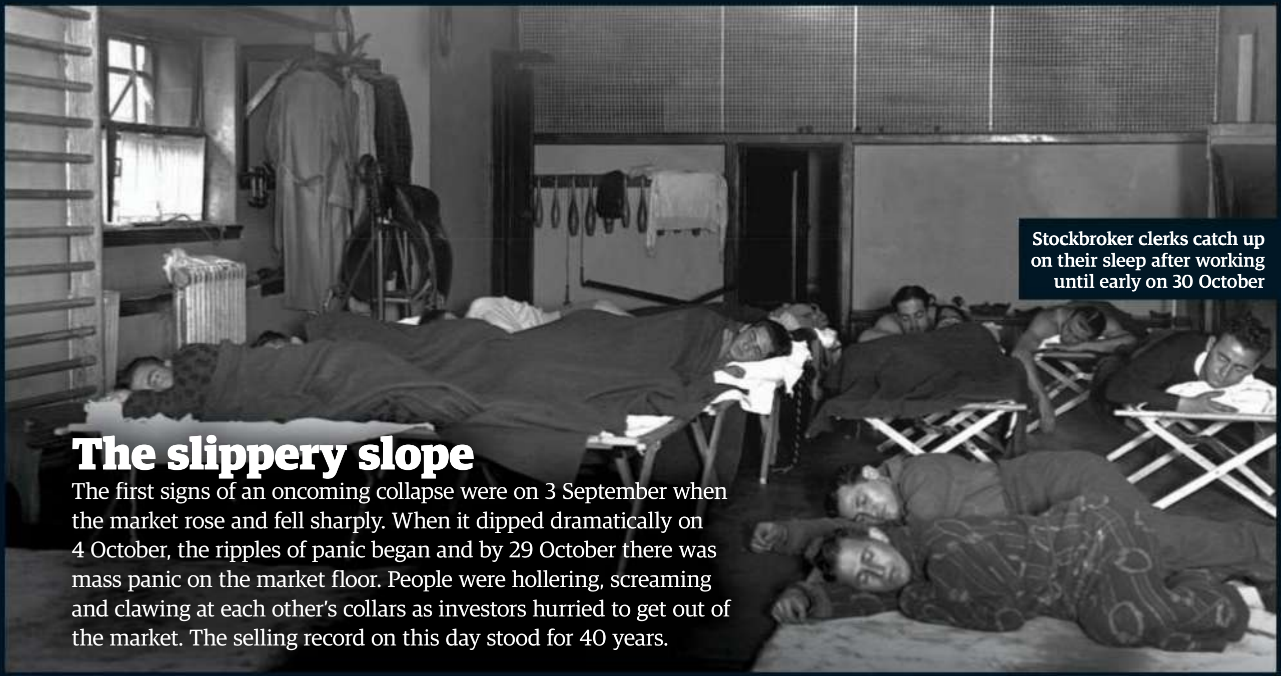
Also known as Black Tuesday, the Wall Street Crash occurred in late-October 1929 and was the worst stock market crash in the United States' history. The crash subsequently plunged much of the world into a severe economic depression that lasted ten years, and has even been linked to World War II.

What caused it?

The stock market seemed like a surefire bet,. People would borrow money from banks to buy stocks, and then the stocks were used as collateral for the loans. So many people were doing this that it created a debt of billions of dollars. When the market began to dip around 4 October, people panicked and it led to mass selling as traders tried to scrape anything for their losses.

Mass suicide?

It's commonly believed that many traders reacted to the crash by throwing themselves out of high windows, with mass suicide sweeping through the wealthy who had lost everything. Newspapers at the time helped to sensationalise these accounts, but actually this is not true. Of the 100 suicide attempts that year, only four were linked to the crash.



Stockbroker clerks catch up on their sleep after working until early on 30 October

The slippery slope

The first signs of an oncoming collapse were on 3 September when the market rose and fell sharply. When it dipped dramatically on 4 October, the ripples of panic began and by 29 October there was mass panic on the market floor. People were hollering, screaming and clawing at each other's collars as investors hurried to get out of the market. The selling record on this day stood for 40 years.

The link to war

The impact of the Wall Street Crash was felt worldwide, especially in Europe. When the USA had a strong financial position through the 1920s, it loaned Germany vast sums of money. Following the crash the USA recalled those loans; this devastated Germany's economy and created a period of social and political desperation. This encouraged people to be drawn to radical policies and politicians, such as those of the Nazi Party.

Last-minute bailout

Several of Wall Street's top bankers made efforts to revitalise the market. Richard Whitney, vice president of the Stock Exchange, bought 10,000 shares in US Steel above the current price. Although this worked, the relief was short-lived. On 29 October William C Durant and the Rockefeller family attempted a similar move, but the crash had gained too much momentum to be stopped.

Meanwhile in the Soviet Union...

After the crash, countries all over the world suffered their own crashes and bankruptcies, but one country was spared from this - the USSR. The Soviet Union was not only a Communist state with a planned economy, but it was also very isolated from the world economy with little international trade, leaving it largely unaffected by the worldwide depression.

Mass unemployment

Less than one per cent of Americans actually possessed stocks at the time, but the crash meant business owners didn't have enough money to run their companies, forcing businesses to close and people to lose their jobs. In turn this meant people couldn't afford to buy consumer products and factories also went bust, causing more unemployment and poverty.

Many banks did not have enough money to lend to businesses

MADISON AND BURKE
80 POST ST.
TO LEASE
BLATTEIS REALTY CO
LEASING SPECIALISTS
53 POST ST.
GArfield 2060
TO LET
PALMER
COFFEE and
Hamburgher Sandwich

From prosperity to poverty

The crash sparked a run on US banks, with crowds forming outside to withdraw all their savings. Banks in trouble were forced to call in their loans, borrowers who had lost it all on the stock market were unable to pay and their property was repossessed. Many previously wealthy citizens were forced to sell their treasured possessions.

Key figures

Richard Whitney
1888-1974
President of the New York Stock Exchange, he tried to inject a large amount of money into the market, to no avail.

Roger Babson
1875-1967
Economist who warned in September 1929 that "sooner or later a crash is coming, and it may be terrific."

Irving Fisher
1867-1947
Economist whose reputation suffered when he proclaimed the stock market had reached "a permanently high plateau" prior to the crash.

William C Durant
1861-1947
Attempted to demonstrate confidence in the stock market by buying large quantities of stock; a costly failure.

Clarence Hatry
1888-1965
British investor whose arrest led to the London Stock Exchange Crash, which contributed to the Wall Street Crash.

Key events

The London Crash
20 September 1929
The London Stock Exchange crashes, weakening US brokers' optimism in investment overseas.

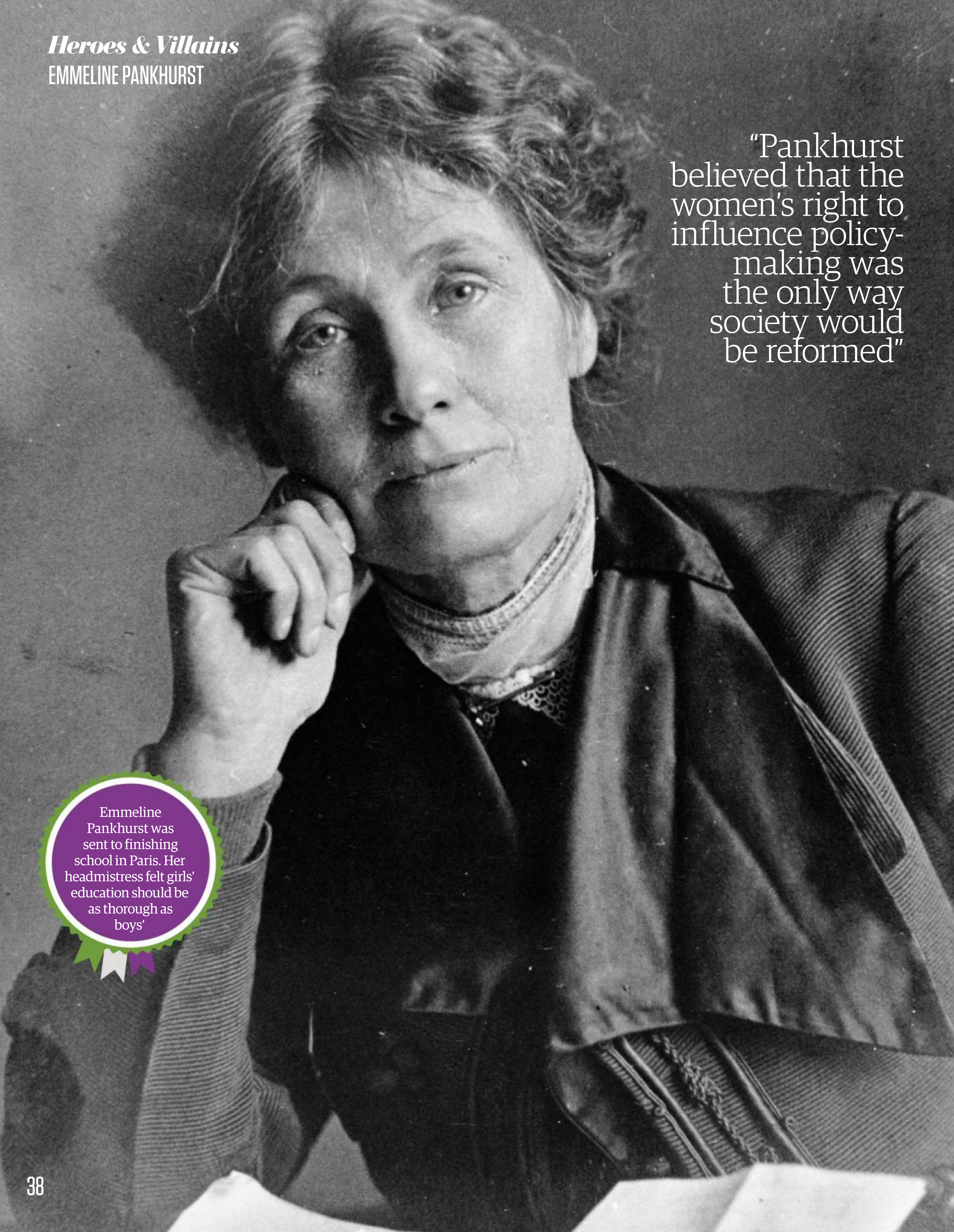
A failed bailout
19 October 1929
Investments by the Rockefeller family and William C Durant fail to stop the decline.

Market goes into free-fall
24 October 1929
13 million shares are traded, with losses as high as $5bn reported. Bankers pour money into the market to try and save it.

Black Monday
28 October 1929
The slide continues with a record loss of 13%.

Black Tuesday
29 October 1929
Mass panic selling leads to 16 million shares being traded. $14bn is lost and millions of people lose their savings.

© Alamy; Corbis



"Pankhurst believed that the women's right to influence policy-making was the only way society would be reformed"

Emmeline Pankhurst was sent to finishing school in Paris. Her headmistress felt girls' education should be as thorough as boys'

Heroes & Villains
Emmeline Pankhurst

Discover the makings of a militant as we look back on the incredible story of the suffragette leader

Written by Jodie Tyley

We are here, not because we are law-breakers; we are here in our efforts to be law-makers." Those immortal words by Emmeline Pankhurst encapsulated the Suffragette Movement. As their iron-willed leader, she fought for women's right to vote in the United Kingdom - by any means. The motto was "Deeds, not words", and a campaign of vandalism, violent protests and arson reigned. Pankhurst saw it as her duty to break the law in order to draw attention to the reasons behind her actions; a belief that would see her arrested on countless occasions and even cause a rift within her own family. She argued that unless women were given political power, the laws of the country wouldn't have an equal standard of morals. Articulate and strong, Pankhurst would enter the history books for influencing how women were perceived within society - a role she seemed almost destined to fulfil from an early age.

Much of Pankhurst's political education took place at her home in Manchester, England. Her parents Robert Goulden and Sophia Crane were involved in many social movements such as the abolition of slavery, and her grandfather had even been in the crowd at the Peterloo Massacre in 1819. Unsurprisingly, she was barely into her teens when a young Emmeline Pankhurst followed in their footsteps. "I was 14 years old when I went to my first suffrage meeting," she wrote in her autobiography, *My Own Story*. "Returning from school one day, I met my mother just setting out for the meeting, and I begged her to let me go along."

Her childhood was a happy one, surrounded by a loving family in a comfortable home, but she couldn't help but sense the inequality between genders. It started when Pankhurst and her brothers were sent to school. While her father spent a great deal of time discussing the boys' education, hers and her sister's were scarcely mentioned at all. While feigning sleep one night, she overheard her father mutter, "What a pity she wasn't born a lad." His words stuck with her for days before she concluded that men saw themselves as superior to women, and that she didn't regret her sex one bit. "I suppose I had always been an unconscious suffragist," she reflected. "With my temperament and my surroundings, I could scarcely have been otherwise."

Born on 15 July 1858, Pankhurst claimed her birthday was 14 July, Bastille Day, which marks the start of the French Revolution

Before Pankhurst joined the fight, suffrage - the right to vote in political elections - had been stirring for years. In 1866, a group of women presented a petition to MPs and an amendment to the Reform Act was proposed. It was defeated in Parliament by 196 votes to 73 and women's suffrage groups started to form all over the country. In 1897, 17 of these groups banded together to create the National Union of Women's Suffrage Societies. Led by Millicent

Emmeline Pankhurst being arrested at King's Gate in May 1914 in her attempts to reach Buckingham Palace. Many others were arrested and adopted hunger strikes

Life in the time of Emmeline Pankhurst

Time before chocolate
Food was bland and the working class lived on a diet of bread, butter and potatoes – meat was a luxury. In the late 19th century, however, canned food became available for the first time, several new biscuits were invented (including the digestive in 1892), and the first chocolate bar was made in 1847.

Poor education
It wasn't until 1870 that the state took responsibility for education in Britain. Before then, churches were tasked with providing schools for poor children. In 1880, school became compulsory for five to ten-year-olds, but there was a charge for all but the poorest children until 1891.

No weekends
In the early 19th century, everyone had Sunday off but the weekend wasn't truly born until the 1890s when most workers gained a half day holiday on a Saturday! Until then, people were only given a few paid holidays each year under the Bank Holiday Act of 1871.

Birth of the printing press
The steam-driven printing press was invented in 1814 and enabled newspapers to become commonplace. By 1896, the *Daily Mail* had hit the shelves, where it has remained in Britain ever since. Its style was deliberately sensational to appeal to less-educated readers.

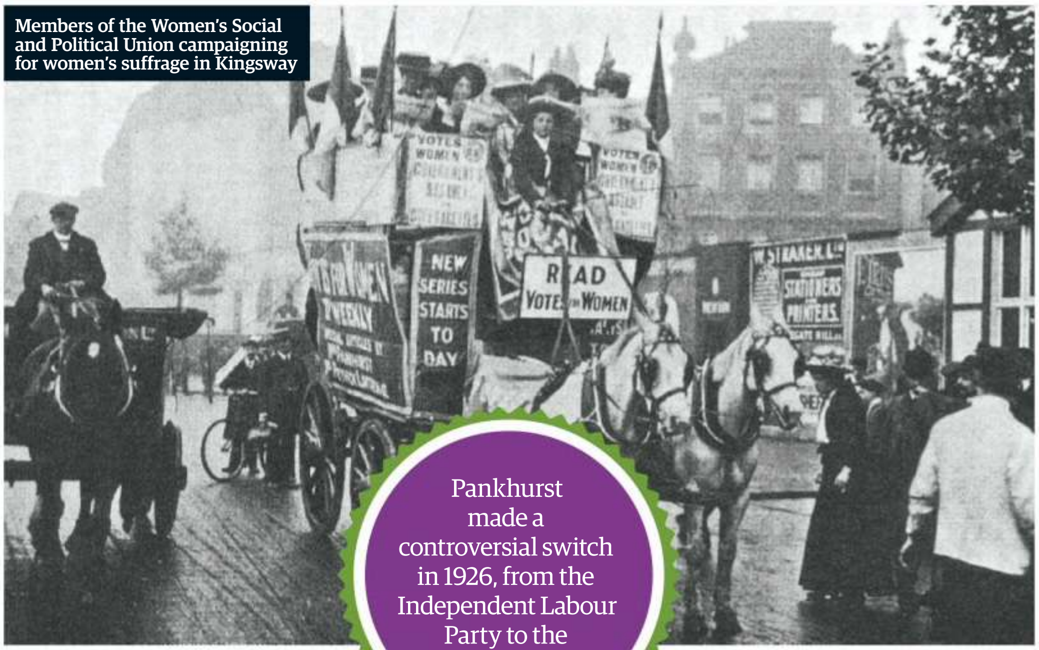
Railway revolution
Getting from A to B became much easier when the railway boom took off in the 1800s. The first major railway was from Liverpool to Manchester, where Emmeline Pankhurst lived. This opened in 1830. By 1890, the first electric underground trains were running in London.

The Poor Law

The 1800s saw the introduction of the Poor Law – a lifeline to the impoverished. According to the law, each parish had to set money aside for those who were unable to work. However, changes to the law in 1834 saw the cost of looking after the poor dramatically reduced. The Poor Law Amendment Act meant that money was only given to the poor in exceptional circumstances and, if they wanted help, they had to go to a workhouse and earn it. Food and shelter was given in exchange for manual labour, but the conditions were so dreadful that only the truly desperate would turn to this solution.

Emmeline Pankhurst would witness the horrors first-hand, after joining the Independent Labour Party and being elected as Poor Law guardian in Chorlton-on-Medlock in Manchester, England. "The first time I went into the place I was horrified to see little girls seven and eight-years-old on their knees scrubbing the cold stones of the long corridors," she said. "I found that there were pregnant women in that workhouse, scrubbing floors, doing the hardest kind of work, almost until their babies came into the world." At once, she began to use her position on the board of guardians to try and change these conditions for the better. This activism lit a fire that would spur her on to becoming the leader of the suffragettes.

One of her homes in Manchester was opened as the Pankhurst Centre, a museum and a space for women to congregate



Members of the Women's Social and Political Union campaigning for women's suffrage in Kingsway

Pankhurst made a controversial switch in 1926, from the Independent Labour Party to the Conservatives

Fawcett, they were characterised by their peaceful campaign tactics, holding public meetings and distributing posters and leaflets, but without progress. Pankhurst, however, would wash her hands of this approach when she founded the Women's Social and Political Union in 1903.

It was the horrors she witnessed while working as a Poor Law guardian that drove her to believe that "Deeds, not words" was the only way forward. The regular visits to the Manchester workhouses exposed her to many elderly women who had been domestic-servant class, unmarried and who had lost their job only to wind up with no other option than to slave away in the workhouse. Pregnant women would be separated from their babies after two weeks if they wanted to remain in the workhouse, or leave without a home or hope.

It was these women who stoked the fire in Pankhurst, giving her the fervent belief that the women's right to influence policy-making was the only way society would be reformed. "Women have more practical ideas about relief… than men display," she said.

During this time, Pankhurst was supported by her husband, who did a great deal to bolster her beliefs. As a radical liberal barrister 24 years her senior, Dr Richard Pankhurst was a socialist and stoic supporter of the women's suffrage movement. They married in 1879 and became a formidable team. Together, they founded the Women's Franchise League – an organisation that strived to secure the vote for women in local elections. But tragedy soon struck as Richard Pankhurst's untimely death left

Defining moment

Birth of first child

22 September 1880

Richard and Emmeline Pankhurst's first child, Christabel, is born less than a year after their marriage. Christabel grows up to be very close to her mother, co-founding the Women's Social and Political Union and spending 15 years working alongside her. Other siblings notice the bond, as younger daughter Sylvia notes in 1931: "She was our mother's favourite; we all knew it, and I, for one, never resented the fact." In 1959, Christabel writes *Unshackled: The Story Of How We Won The Vote*, and lauds her mother's dedication.

Timeline

1858

Born
Emmeline Pankhurst is born in Moss Side in Manchester, England, to parents that are very politically active. She has 11 siblings, but three tragically die before the age of two.
15 July 1858

Married
After returning from finishing school in Paris, she meets the lawyer Richard Pankhurst, who shares her views on women's suffrage. They marry in Salford.
18 December 1879

Women's Franchise League begins
Emmeline Pankhurst and her husband found the Women's Franchise League, aiming to give women the vote in local elections.
1 January 1889

Richard dies
Richard Pankhurst dies suddenly of stomach ulcers, leaving Emmeline and five children. In his lifetime, he did much for women's suffrage, including writing the Married Women's Property Act of 1870.
5 July 1898

WSPU is launched
Pankhurst forms the National Women's Social and Political Union in Manchester, with the help of her eldest daughter. Their motto is "Deeds, not words" and their aim is to win the vote for women. The women-only activist group is independent of government and political parties.
October 1903

VOTES FOR WOMEN

her alone with five children to support. In spite of such odds, she threw herself whole-heartedly into the suffrage movement and later, so would her daughters. A crucial step was transforming the Women's Franchise League into a women-only activist group – the Women's Social And Political Union.

Pankhurst was encouraged to run for the House of Commons, but insisted her daughter Christabel would be a better choice

It was Emmeline Pankhurst's eldest daughter Christabel who persuaded her mother that the WFL she had set up some 14 years before had fallen hopelessly out of touch. She had inherited her parents' indomitable values and became a leading member of the WSPU, and in 1905 was one of the first suffragettes to be thrown in prison. Her crime was interrupting a Liberal Party meeting, shouting demands for women's votes and reportedly assaulting a police officer, but the acts of the WSPU would grow to be much more violent, eventually using arson as a tactic. It proved a step too far for two of Pankhurst's daughters, Adela and Sylvia, and they left the activist group. Those who remained cut phone lines, sent letter bombs and attacked the home of Chancellor David Lloyd George. "I have never advised the destruction of life, but of property, yes," admitted Pankhurst.

In 1912, she was sent to Holloway Prison for smashing windows, a place she described as "at once the stuffiest and the draughtiest building" she had ever set foot in. While in prison, however, suffragettes were not recognised as political prisoners because the government didn't see their actions as such. To protest against what she saw as unjust and lengthy sentences (three months for breaking a window, for instance), Pankhurst went on hunger strike, resulting in violent force-feeding. She wasn't alone in her actions and the government retaliated with the 'Cat and Mouse' Act, where striking prisoners were released until they grew strong enough to be re-arrested. These acts split public opinion, particularly when suffragette Emily Davison walked on to the course at the Epsom Derby and was trampled by King George V's horse, dying four days later. Pankhurst later wrote that Emily "clung to her conviction that one great tragedy, the deliberate throwing into the breach of a human life, would put an end to the intolerable torture of women."

What would put an end to the militant activism, however, was war. On 4 August 1914 – just days after the First World War broke out – Pankhurst and her daughter ordered a truce between the WSPU and the government. Considering it their patriotic duty, they channelled their energies into helping the war effort and subsequently all suffragettes were released from prison. As Pankhurst pointed out, there was no use fighting for a vote when there might not be a country left in which they could cast one. So as men went to fight overseas, the suffragette leaders volunteered to take their place. It was an unexpected opportunity to prove that women were every bit as capable as their male counterparts, taking on important industrial roles, from working in munitions factories to labouring on farms.

Society's attitudes towards the sexes finally started to change and on 10 January 1918, the Representation of the People Act was passed. This granted the vote to all 'respectable' ladies over 30-years-old who were householders or married to householders. To this day, historians still debate whether it was the Great War that brought about the victory for the suffragettes, or whether the pre-war political movement should take the credit. Some also argue whether the militant campaign did more harm than good. Either way, Emmeline Pankhurst did a great deal to draw attention to her passionate belief that women deserved to be equal.

Sadly, she died in the month before the right to vote was extended to all women over 21 years of age on 2 July 1928 – finally on a par with men in the United Kingdom. Just two years after her death, Pankhurst's efforts were commemorated with a statue in London's Victoria Tower Gardens. At the unveiling, a crowd of former suffragettes gathered to pay their respects to such a dedicated foot soldier of the feminist movement.

"The acts of the WSPU would grow to be much more violent, eventually using arson as a tactic"

Defining moment

Demanding votes

21 June 1908

500,000 activists storm Hyde Park in London demanding votes for women. Prime Minister Asquith is unmoved, angering members of the WSPU. After the rally, 12 women gather in Parliament Square to speak on women's rights but are stopped. Two WSPU members, Edith New and Mary Leigh, hurl rocks at the windows of 10 Downing Street. Pankhurst is pleased, despite denying WSPU involvement.

Emmeline Pankhurst in 1911, jeered by a disapproving crowd in New York

© Alamy

Hunger strikes
The WSPU protest against what they perceived as unfair prison sentences by going on hunger strike. Police officers resort to violently force-feeding the women using tubes.
1909

The Conciliation Bill
When the Conciliation Bill that would have given women the vote is dropped, Pankhurst starts a protest in anger. Over 100 women are arrested and charged for disturbing the peace.
18 November 1910

Truce
Two days after the outbreak of the First World War, Emmeline and Christabel call an immediate halt to suffrage activism and support their country in the war effort.
4 August 1914

Votes for men and women
The Representation of the People Act grants votes to all men over the age of 21 and to women over the age of 30.
6 February 1918

Emmeline dies
Emmeline Pankhurst dies just weeks before the vote is extended to all women over 21 years of age, on 2 July 1928.
14 June 1928

Commemorated
Two years after her death, Emmeline Pankhurst is commemorated with a statue in London's Victoria Tower Gardens. A crowd of radicals and former suffragettes gather to celebrate her.
6 March 1930

1930

© Alamy

Through History

MEDICAL DEVICES

These torturous-looking instruments and machines were actually designed to save lives!

TREPAN 6500 BCE, EUROPE

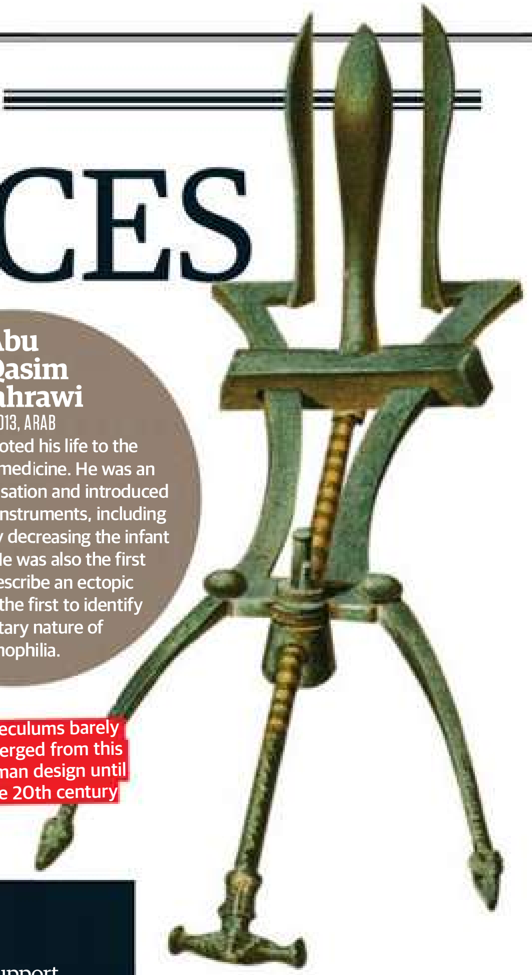
These days, if we have a headache we can take an aspirin, have a glass of water, and it usually disappears within an hour or two. But in Neolithic times, the cure was a lot more gruesome. A hole was cut in the skull of the patient to expose the dura mater – the brain's tough outer layer. This was done using a trepan, which in Neolithic times was simply a piece of flint attached to a wooden shaft. In some parts of the globe, trepanning is still used today to treat mental disorders.

Neolithic trepans were made from flint or shark's teeth

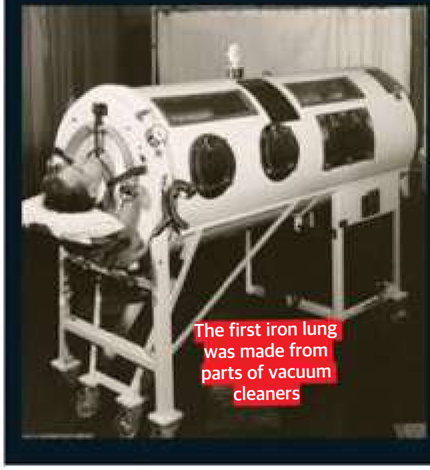
Abu al-Qasim Al-Zahrawi

936-1013, ARAB

Al-Zahrawi devoted his life to the advancement of medicine. He was an advocate of cauterisation and introduced over 200 surgical instruments, including forceps – drastically decreasing the infant mortality rate. He was also the first physician to describe an ectopic pregnancy and the first to identify the hereditary nature of haemophilia.



Speculums barely diverged from this Roman design until the 20th century



The first iron lung was made from parts of vacuum cleaners

IRON LUNG 1928, USA

These were among the first life-support machines, gaining fame for saving polio victims whose breathing muscles had been paralysed by the disease. They consisted of an airtight chamber connected to an air pump. Air was sucked in and out of the chamber, causing the patient's lungs to contract and expand, allowing them to breathe. Many polio patients recovered after spending only minutes inside an iron lung, while other less fortunate victims spent their entire lives looking at the world through a mirror attached to the top of the machine.

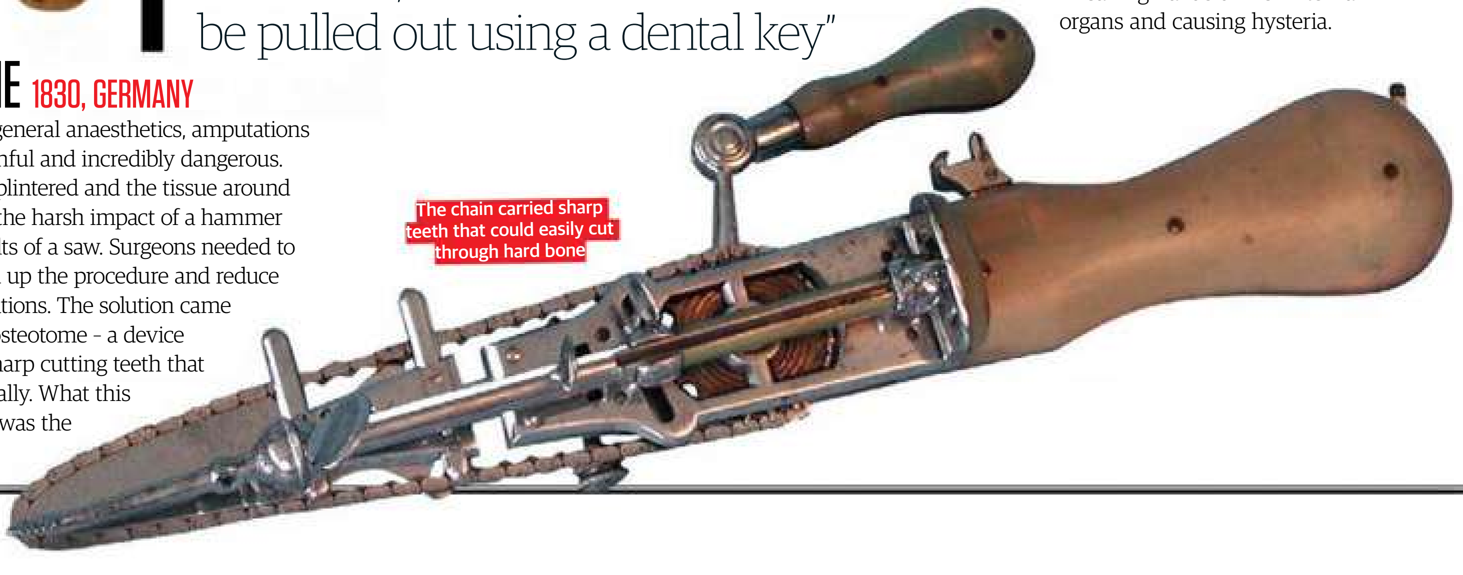
> "Rather than treat a toothache with antibiotics, infected teeth would have to be pulled out using a dental key"

SPECULUM 79 CE, ITALY

Though the eruption of Mount Vesuvius destroyed the lives of thousands of Roman people, the artefacts recovered from the ash-covered city of Pompeii provide a never-before-seen insight into the lives they led. This includes medicine. Several surgical instruments have been found here, including this terrifying looking speculum. Roman gynaecology was relatively primitive, and physicians even believed that a woman's womb could 'wander' around the body, wreaking havoc on her internal organs and causing hysteria.

OSTEOTOME 1830, GERMANY

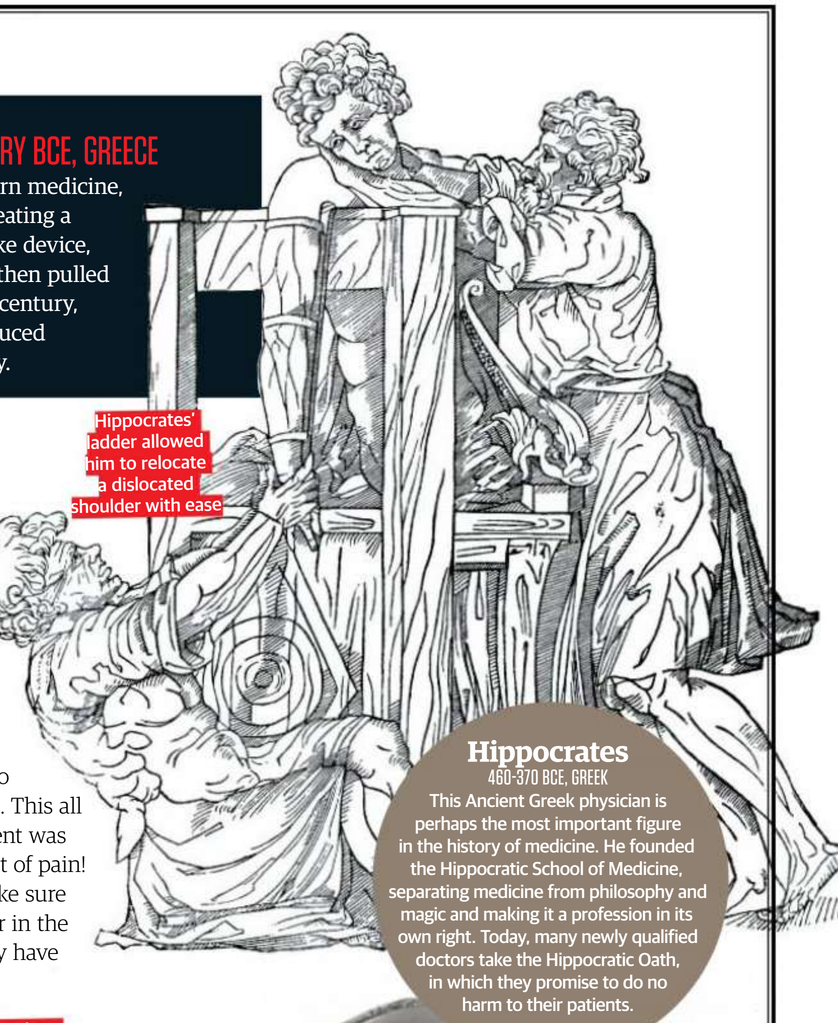
In the days before general anaesthetics, amputations were incredibly painful and incredibly dangerous. Bones were often splintered and the tissue around them damaged by the harsh impact of a hammer and chisel or the jolts of a saw. Surgeons needed to find a way to speed up the procedure and reduce the risk of complications. The solution came in the form of the osteotome – a device with a chain and sharp cutting teeth that was cranked manually. What this device was, in fact, was the first-ever chainsaw.



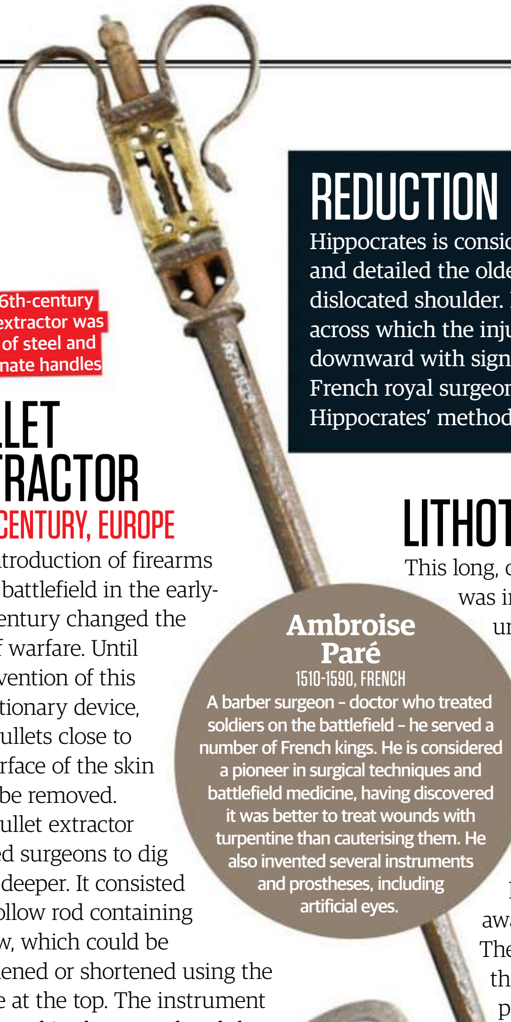
The chain carried sharp teeth that could easily cut through hard bone

REDUCTION DEVICE 5TH CENTURY BCE, GREECE

Hippocrates is considered the father of Western medicine, and detailed the oldest known method for treating a dislocated shoulder. He developed a ladder-like device, across which the injured arm was slung and then pulled downward with significant force. In the 16th century, French royal surgeon Ambroise Paré reintroduced Hippocrates' method, and it is still used today.



Hippocrates' ladder allowed him to relocate a dislocated shoulder with ease



This 16th-century bullet extractor was made of steel and had ornate handles

BULLET EXTRACTOR

16TH CENTURY, EUROPE

The introduction of firearms to the battlefield in the early-13th century changed the face of warfare. Until the invention of this revolutionary device, only bullets close to the surface of the skin could be removed. This bullet extractor allowed surgeons to dig much deeper. It consisted of a hollow rod containing a screw, which could be lengthened or shortened using the handle at the top. The instrument was placed in the wound and the screw lengthened in order to pierce the bullet and remove it.

Ambroise Paré

1510-1590, FRENCH

A barber surgeon – doctor who treated soldiers on the battlefield – he served a number of French kings. He is considered a pioneer in surgical techniques and battlefield medicine, having discovered it was better to treat wounds with turpentine than cauterising them. He also invented several instruments and prostheses, including artificial eyes.

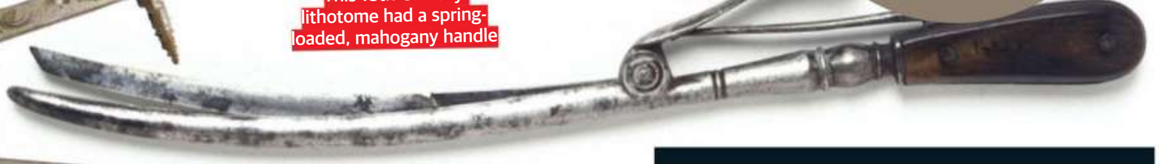
LITHOTOME 1780, BRITAIN

This long, claw-like instrument was inserted up the urethra and into the bladder. The surgeon would then use it to grip onto small bladder stones and pull them out, or use the blade to cut up larger ones so they could be weed out. This all happened while the patient was awake – undoubtedly in a lot of pain! The surgeon also had to make sure they didn't slice the bladder in the process, or the patient may have bled to death.

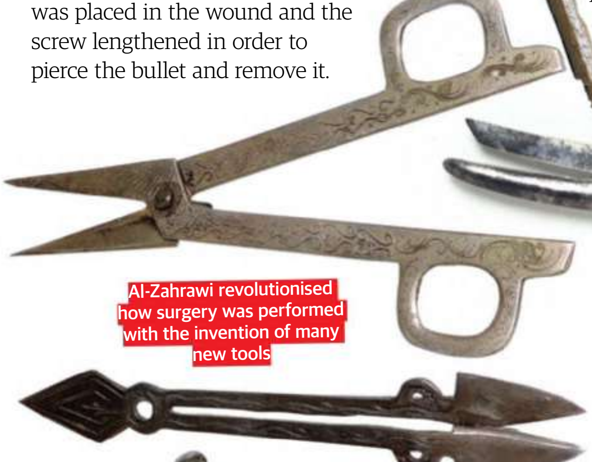
Hippocrates

460-370 BCE, GREEK

This Ancient Greek physician is perhaps the most important figure in the history of medicine. He founded the Hippocratic School of Medicine, separating medicine from philosophy and magic and making it a profession in its own right. Today, many newly qualified doctors take the Hippocratic Oath, in which they promise to do no harm to their patients.



This 18th-century lithotome had a spring-loaded, mahogany handle



Al-Zahrawi revolutionised how surgery was performed with the invention of many new tools

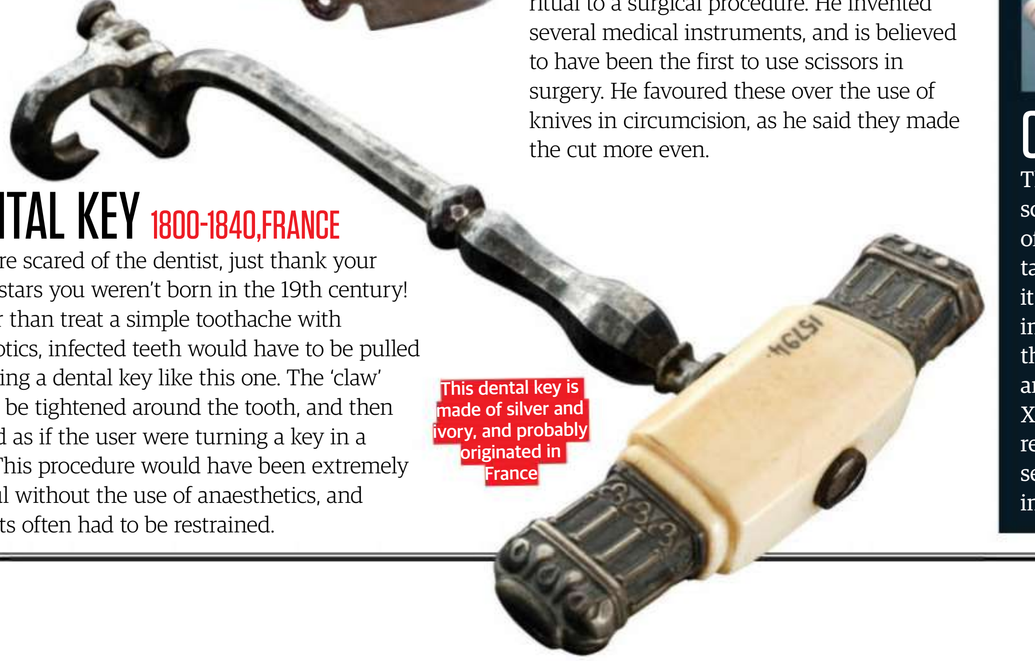
CIRCUMCISION SCISSORS

10TH/11TH CENTURY, MUSLIM SPAIN

Medieval surgeon Abu al-Qasim al-Zahrawi transformed circumcision from a religious ritual to a surgical procedure. He invented several medical instruments, and is believed to have been the first to use scissors in surgery. He favoured these over the use of knives in circumcision, as he said they made the cut more even.

DENTAL KEY 1800-1840,FRANCE

If you're scared of the dentist, just thank your lucky stars you weren't born in the 19th century! Rather than treat a simple toothache with antibiotics, infected teeth would have to be pulled out using a dental key like this one. The 'claw' would be tightened around the tooth, and then rotated as if the user were turning a key in a lock. This procedure would have been extremely painful without the use of anaesthetics, and patients often had to be restrained.



This dental key is made of silver and ivory, and probably originated in France

Newer CT scanners can produces 3D images of our insides

CT SCANNER PRESENT, BRITAIN

The pinnacle of modern medicine, the CT scanner allows doctors to see detailed images of our insides. It was originally designed to take pictures of the brain, and the first time it was used in 1971 it revealed a brain tumour in a 41-year-old patient. Now doctors can use them to detect all kinds of abnormalities in any part of the body. It works by beaming X-rays through a person, which are then received by the machine and the information sent to a computer. This then processes the information to create an image.

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ANNE BOLEYN

Follow the romantic beginning and disastrous end of the love affair that rocked the very foundations of England itself

Written by Frances White

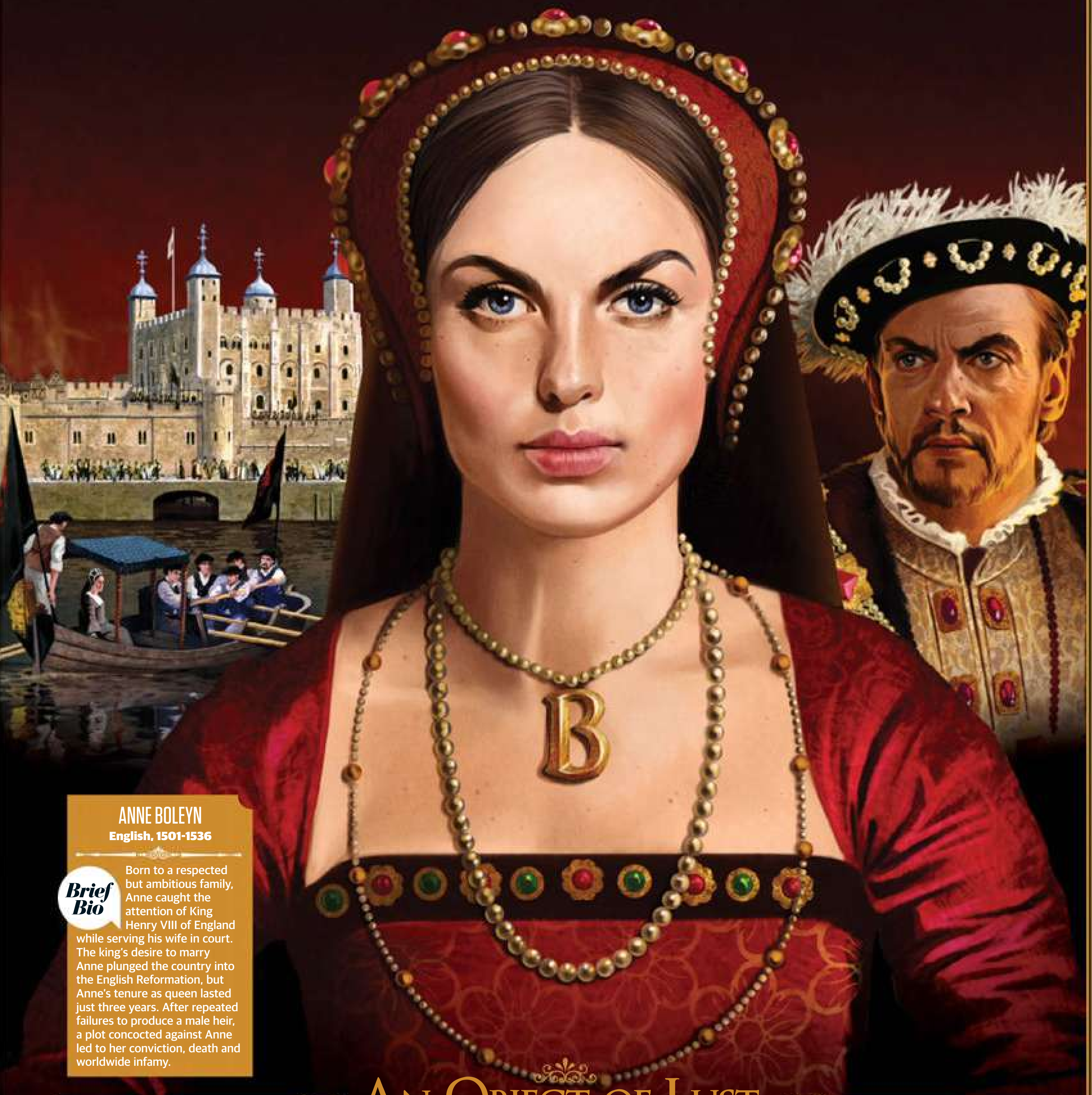
The sun streamed down on the brisk spring morning as a figure emerged near from four-turreted White Tower of the Tower of London. The crowd that had gathered there were oddly quiet; they watched silently as the slender woman passed through them. She was dressed in a loose, grey gown, so dark it was almost black, with a red petticoat underneath. An ermine mantle was draped around her neck, and her long dark hair was tied above her head, exposing her thin, dainty neck. Two of her ladies accompanied her as she climbed the scaffold that had been erected for the day's sombre event. Her steps were strong and firm, her countenance steely and unreadable.

Although the strength of her steps was remarkable for one facing her death, when she turned to the crowd and spoke her voice trembled. However, her words rang out loud and clear. She begged the people to forgive her if she had not treated them with gentleness, and then prayed that God would have mercy for those who had condemned her. She ended by praying for the king, who was a good, gentle, and sovereign lord. All these things she uttered, but not once did she admit her guilt for the crimes she would die for. Her words were so sweet, her manner so graceful, that many gathered there shed a tear for the condemned woman.

She wished farewell to her weeping ladies, and removed her headdress, tucking her long, thick hair under a coif. As she knelt upright, one of her ladies came forward and tied a blindfold over her eyes. She began to mutter under her breath "Jesu receive my soul; O Lord God have pity on my soul", over and over again. She prayed silently as she received her husband's final gift, a swordsman of Saint-Omer; he had given her the mercy of a sword in place of an axe. The executioner raised the sword high, its sharpened blade gleaming in the sunlight, then brought it down upon her thin neck. It was all over in a single stroke. The queen was dead.

It is portrayed, often unfairly, that Anne Boleyn descended on King Henry VIII like some sort of wicked, conniving temptress, luring him away with her dark looks and feminine charms from his almost 24-year-long marriage, young daughter and queen beloved by the population. But Henry had been anything but loyal to Catherine, and had already fathered his illegitimate son Henry Fitzroy before Anne was in the picture. In fact, it had been Anne's sister, Mary, who initially caught the king's attention, and he conducted an affair with the older Boleyn sister that may have resulted in two more children. When Henry was first drawn to Anne, it is highly likely that he desired her simply as another mistress. But she had other plans.

The new lady in waiting was a captivating figure. Having recently returned from serving the French Queen Claude, she boasted an elegance and poise that instantly created a stir. Her dark features were unfashionable for the time, but her deep brown eyes and unusual beauty caught the attention of more than just the king. Among those competing for her affections were Sir Thomas Wyatt, an acclaimed poet, and Henry Percy, who even went as far as to secure Anne's hand in a secret betrothal. However, all those with their gaze fixed upon the enchanting young debutante soon found themselves facing a rival they could not hope to better - the king of England.



ANNE BOLEYN

English, 1501-1536

Brief Bio

Born to a respected but ambitious family, Anne caught the attention of King Henry VIII of England while serving his wife in court. The king's desire to marry Anne plunged the country into the English Reformation, but Anne's tenure as queen lasted just three years. After repeated failures to produce a male heir, a plot concocted against Anne led to her conviction, death and worldwide infamy.

AN OBJECT OF LUST

Appearance

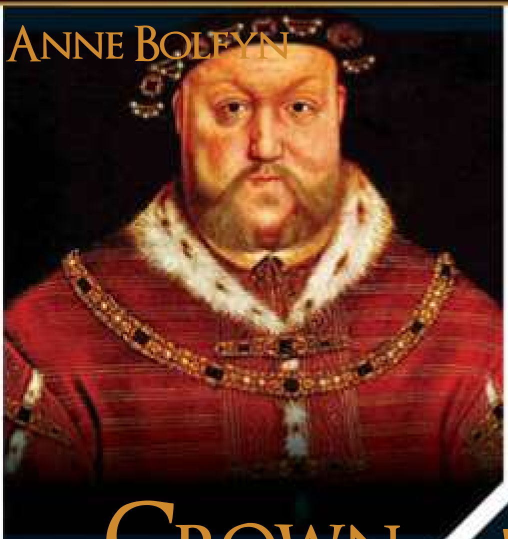
Although opinion is divided on Anne's true appearance, she presented herself with great grace and manners. She was dressed in the latest fashions and is consistently described as being elegant and sophisticated. Henry was captivated by the bewitching and fair persona Anne presented at court.

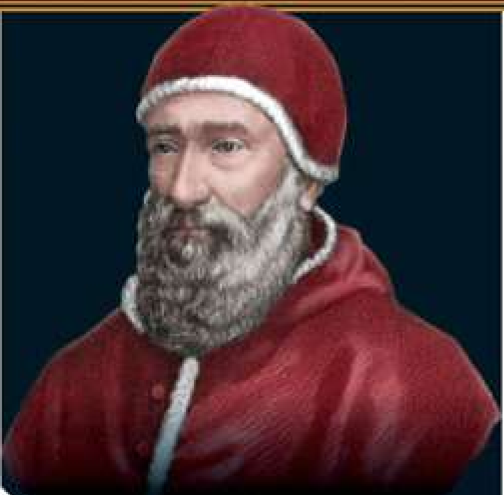
Social standing

Although her father was descended from middle-class tradesmen, through her mother Anne's ancestry was linked to Margaret of France and her husband, King Edward I. Her ambitious father boosted the family reputation at court and he entered the king's most intimate circle.

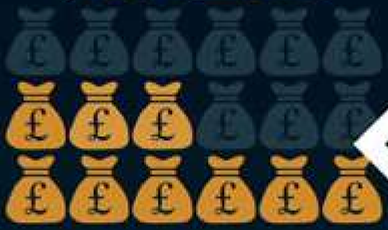
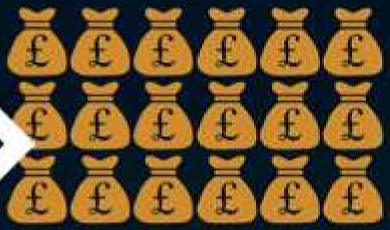
Intelligence

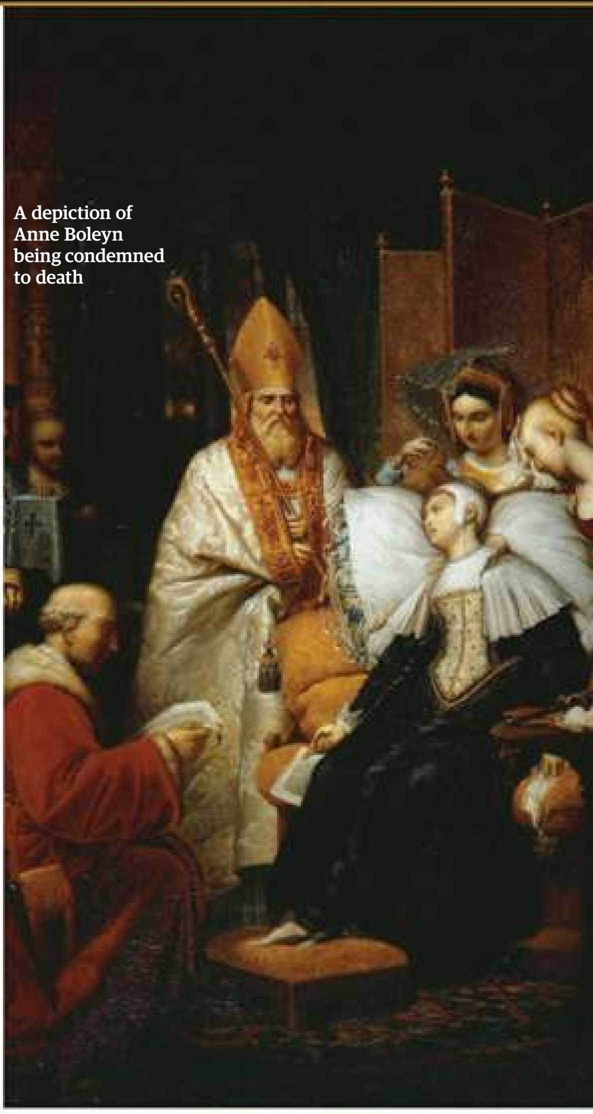
Henry was desperate to be seen as a modern, cosmopolitan man and did everything to beat his rival King Francis I of France. Not only had Anne served in the French court, but she was also intelligent, witty and an accomplished singer and musician; certainly a catch for a man looking to prove his suitability to the throne.





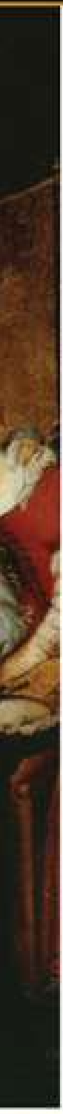
Crown v Church

	Crown King Henry VIII	Church Pope Clement VII
NUMBER OF FOLLOWERS	2 MILLION	OVER 75 MILLION
WEALTH		
ON DIVORCE	"If a man shall take his brother's wife it is an unclean thing… they shall be childless" **King Henry VIII quoting the *Bible*, Leviticus, 20:21, as justification for seeking a divorce from Catherine of Aragon**	"Forbids Henry to remarry until the decision of the case, and declares that if he does all issue will be illegitimate"
DRESS SENSE	PURPLE VELVET, **ITALIAN AND FRENCH FASHION,** LARGE PUFFED SLEEVES, **FEATHERED HAT,** FUR MANTLE, **MULTIPLE EXPENSIVE PIECES OF JEWELLERY**	STRICT POPE ATTIRE, **CHOIR DRESS – A WHITE SILK CASSOCK,** SCULL CAP AND A LACE ROCHET
ON RELIGION	"For all the prelates at their consecration make an oath to the Pope clean contrary to the oath that they make to us, so that they seem to be his subjects, and not ours"	"Forbids any one in England, universities, parliaments, courts of law, etc, to make any decision in an affair the judgment of which is reserved for the Holy See"



A depiction of Anne Boleyn being condemned to death

Hever Castle was the childhood home of Anne Boleyn



TUDOR COURTSHIP

Get set up

As forced marriage is forbidden by the Church, marriages can't strictly be 'arranged', but couples are often matched up by their parents to ensure a suitor of acceptable social standing. Love matches do occur, but are only really acceptable if the wealth of both is suitable.

Shower her in gifts

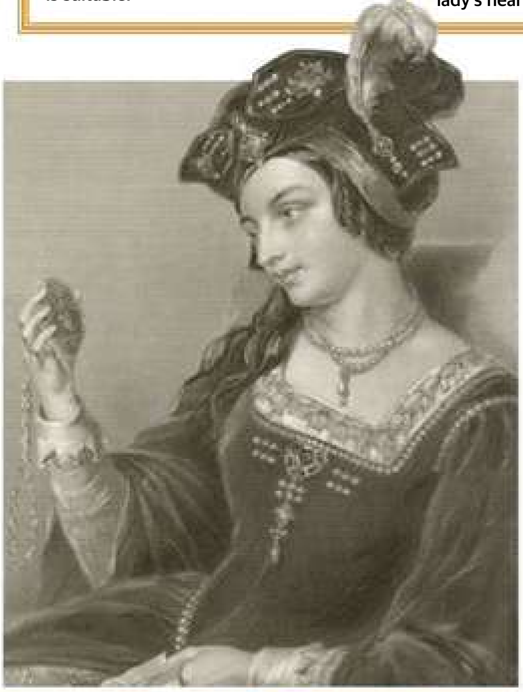
Once a suitable lady has been chosen, a Tudor gentleman will begin the first stage of courtship in which he will visit her frequently and bestow her with an array of valuable gifts to win her over. Ribbons, girdles and gloves can all be used to capture a lady's heart.

Show your commitment

Known as betrothal or handfasting, when the couple have agreed to marry they will go through a period similar to a modern-day engagement. This often involves a public ceremony where pledges are made. After the betrothal the couple are allowed to begin sexual relations.

Get married

The marriage ceremony itself is a very public and high-profile affair in a church with the more guests the better. Wedding dresses will usually be the bride's best dress and, for those who can afford it, the ceremony will be followed by a great feast with food, music and dancing.



Henry prided himself on his image – he was obsessed with his appearance and was constantly attempting to prove himself as an accomplished, charismatic and capable leader. With his own claim to the throne emerging from the turbulent War of the Roses, he was determined to do everything in his power to secure his and his descendant's place as king. As models of the Renaissance man, Henry had a friendly rivalry with Francis I of France and did anything he could do to outmatch him. Anne was trained at the French courts herself, and boasted all the glamour, exceptional skills and intelligence Henry wished to embody himself. He wanted her instantly.

However, unlike her sister, Anne was not a weak-willed girl who would bow to the will of a man. Anne's courtly education in the royal palaces of the Netherlands and France had given her grace, elegance and a beautiful singing voice – but it had also given her one other thing: knowledge of the game of courtly love. She knew what became of the mistresses of kings; she had witnessed her own sister tossed aside the moment his attention had been drawn by another. She had already been denied the love of her sweetheart, Henry Percy, having been deemed unworthy by his father. Henry's obvious affections for her would provide the perfect opportunity to prove just how much she was worth. Anne did something no woman before her had dared to do: she said no to the king.

Rather than outraging him, Anne's rejection spurred Henry to chase her more fervently. He bestowed her with gifts, penned love letter after love letter, but the enchanting but strong-willed woman still said no. When he offered for her to be his official mistress, that too was rejected. She was everything all the women in his life had never been – rather than agreeing politely, she challenged his opinions, debating with him on subjects such as theology. She was passionate, brash and fiery, and she had well and truly set Henry alight. There was no doubt in his mind that such a young, virile woman would bear him the male heir that would ensure the continuation of his line. Sometime in 1527, after a year of chasing her, he proposed marriage to Anne, and finally she said yes.

While we have reams of Henry's love letters, and the extreme decisions that would follow his proposal as evidence of his strong feelings for Anne, we can only speculate on what was going on in the young woman's head. She was under immense pressure from her ambitious father and uncle to elevate the family name – something a match with a king would no doubt achieve – but the lengths to which Henry would go to ensure she became queen must have been captivating for the younger daughter of a family with commoner roots. Because Henry did indeed have great lengths to travel, there was the small matter of his current wife, the now-infertile Catherine of Aragon.

Henry, at least in the early part of his reign, was well known as a devout Catholic. He had even been named a so-called 'defender of the faith' by Pope Leo X, and it was to the *Bible* he turned to seek an annulment for his 24-year-long marriage to the mother of his only legitimate child to date. He argued with Pope Clement VII that his marriage to Catherine, who had been his late brother's wife, directly went against the words in Leviticus 20:21. But the Pope wasn't a fool; to allow the annulment would contradict the decision made by a previous infallible Pope to allow the marriage between Henry and Catherine in the first place. Again Henry was told no and again he was denied Anne and the male heir he so badly desired.

Henry had heard enough 'nos' so on 23 May 1533 he took matters into his own hands and ordered the newly elected and specially selected archbishop of Canterbury, Thomas Cranmer, to grant him the annulment he so desperately needed. That simple action would have consequences that would reach far beyond Henry or Anne's own life, forever changing the religious and political landscape of the country, leading to the English Reformation. Breaking away from Rome was a rash, dangerous and groundbreaking move, but Henry finally had what he wanted – he was allowed to marry the enchanting Anne. And it was just in time, because

> 17 love letters Henry wrote to Anne have survived and are stored in the Vatican Library

ENGLISH REFORMATION IN NUMBERS

1 in 50 was in religious orders

800

religious houses taken over by Henry

10,000

monks, nuns, friars and canons lost their homes

£84,324,100

The amount the crown profited per year as a result of the Reformation

200

The years the monarchy had been trying to suppress religious power

30,000

The number of people who took part in the Pilgrimage of Grace against the Reformation

she was already pregnant, and any child born out of wedlock could not be king - male or not.

Anne was paraded through the streets of London in a grand ceremony; she sat upon swathes of fine cloth resting on two regal horses. She was crowned with St Edward's crown, a crown only worn previously by monarchs, perhaps indicating the male heir she was presumed to carry in her belly. Anne's family immediately felt the boons of their new powerful connection. Her father became Earl of Wiltshire, her cousin Earl of Ormond and even Mary, Henry's previous mistress, received an annual pension of £100. Spirits in the royal court were high, but beyond the palace gates the public were unconvinced. In their eyes not only had Anne ousted a beloved queen, but she was also responsible for the ripples created after the break with Rome; the people needed something stable to place their hopes in - they needed a male heir.

They would have to wait. On 7 September 1533 Anne gave birth, but it was not to the son she, Henry and everyone else had expected. It was a daughter. She was christened 'Elizabeth' in honour of Henry's mother, but this did little to comfort his disappointment. The documents were changed, the tournament that celebrated the birth of an heir cancelled and the people's discontent grew. Doubts also began to grow in Henry's mind; not only had Anne failed to produce the male heir she had promised him prior to their union, but also the qualities that had made the young Boleyn girl so enchanting and desirable as a mistress were proving unsuitable for the wife of a king.

After being married to Catherine of Aragon for so long, Henry was used to having an obedient, reliable and submissive wife. Anne was anything but this. She would openly speak her mind and express opinions contrary to Henry's. Catherine had silently watched as Henry indulged himself with various mistresses beneath her nose, but Anne reacted with extreme jealousy toward any woman that got close to him, as she herself was aware how easily her husband's gaze could travel. He had sacrificed his faith and rocked the very foundations of the country for her, but now Henry was not so sure about Anne, and neither was anyone else.

The pressure on Anne at this point was immeasurable. She was already aware of Henry's affections toward Jane Seymour, one of her own ladies in waiting, and when Anne witnessed her wearing a locket with a portrait of Henry inside - a gift from the king - she tore it from Jane's neck with such force that her fingers bled. She was desperate to cling to power, not only for herself, but for the good of her family and her daughter, and her only chance of keeping a grasp on it relied on something completely out of her control. Sadly for Anne, the pressure upon her was not about to ease up, and she suffered a miscarriage in 1534, just one year into her tenure as queen. Fate itself seemed positioned against her when again in 1536 she miscarried another baby, this time a boy. For Henry, and many others, there was more than fate at work here, and he accused Anne of seducing him with spells. The fact she was unable to bear a healthy son was, apparently, further proof that Anne was cursed. Considering the public's already poor opinion of her, it would not take much for them to believe that Anne was a harbinger of ill omens and quite possibly a witch sent to lead their king and country astray. Not only was she disobedient, fiery and opinionated, but she was also unable to produce a future king. Everyone was agreed - Anne needed to go.

As Anne recovered from her miscarriage, Thomas Cromwell, Henry's chief minister, set about plotting her downfall. Cromwell had his own reasons to fear the influence of Anne; the two had argued where the money from the dissolution

> Anne was a champion of the English translation of the *Bible*

THE HIGHS AND LOWS OF ANNE BOLEYN

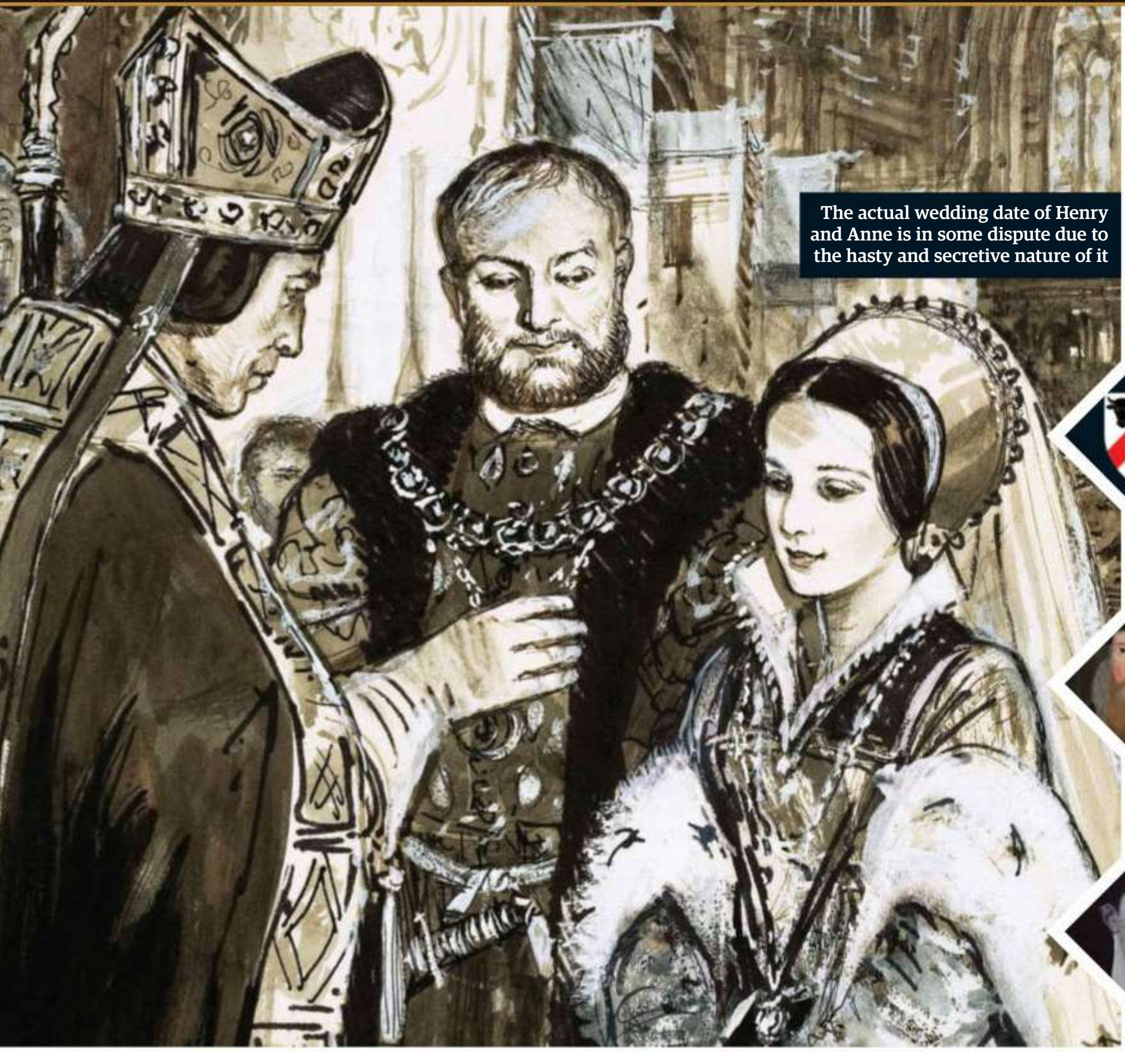
1501
Anne is born to Thomas Boleyn and Lady Elizabeth Howard, the second daughter born to the couple after Mary. The Boleyns are a very respected family of the English aristocracy. The date of Anne's birth is also argued to be 1507.

1513
Anne is sent abroad to receive an education in Europe and joins the schoolroom of Margaret of Austria. Here she learns all the skills expected of a Tudor noblewoman, such as horseback riding, dancing, singing and writing.

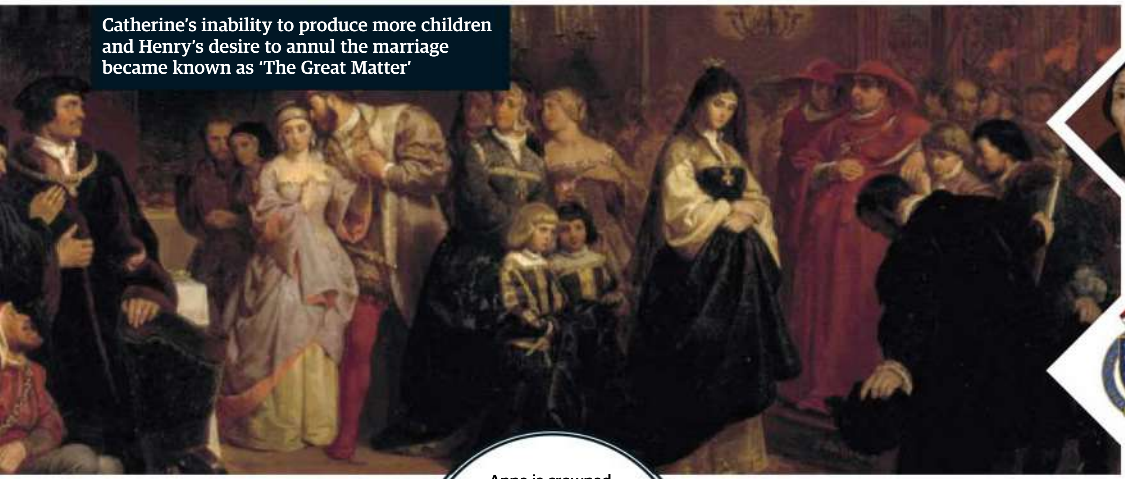
1515
Anne becomes maid of honour to Queen Claude of France. Here she develops many of the skills that will later impress the king, such as art, fashion, etiquette and most importantly, the game of courtly love.

1522
Anne's father summons her back to England to marry James Butler to settle a dispute over land and titles. The marriage arrangements come to a sudden halt, possibly because Thomas Boleyn has a grander suitor in mind for his youngest daughter.

1522
Anne makes her debut at the Chateau Vert pageant. She attracts the attention of Sir Thomas Wyatt and Sir Henry Percy. She later secretly betroths Percy, but it is cut off by his father and Anne enters into the service of Catherine of Aragon.



The actual wedding date of Henry and Anne is in some dispute due to the hasty and secretive nature of it



Catherine's inability to produce more children and Henry's desire to annul the marriage became known as 'The Great Matter'

HEADLESS HALL OF FAME

George Boleyn

CRIME: INCEST, TREASON

DATE OF EXECUTION: 17 MAY 1536

Anne's brother George was charged with incest with the queen and plotting to kill the king. It is likely this was a plot devised by Thomas Cromwell to rid Henry of Anne. Despite no evidence against him he was found guilty and beheaded with the four other men.

Henry Norris

CRIME: TREASON, ADULTERY

DATE OF EXECUTION: 17 MAY 1536

Norris served as groom of the stool to Henry VIII and was close to both the king and queen. The dates he was charged with adultery would be nigh-on impossible, as Anne was not in Westminster at the time. Norris was found guilty and said very little on the scaffold as he met his death.

Francis Weston

CRIME: TREASON, ADULTERY

DATE OF EXECUTION: 17 MAY 1536

Weston served as a gentleman of the Privy Chamber to Henry VIII, and became a friend of the king. Aged 25, Weston was arrested for adultery with Anne and plotting to kill the king, despite no evidence supporting this. Weston protested his innocence to the end but was executed.

John Fisher

CRIME: TREASON

DATE OF EXECUTION: 22 JUNE 1535

Born in Yorkshire, John Fisher was a Roman-Catholic bishop who supported Catherine of Aragon when Henry VIII attempted to divorce her. Fisher refused to accept the king as head of the church and was beheaded as a result. Today Fisher is considered a saint.

Thomas Darcy

CRIME: HIGH TREASON

DATE OF EXECUTION: 30 JUNE 1537

An English nobleman, Darcy was opposed to Henry's dissolution of the monasteries and helped lead the popular uprising the Pilgrimage of Grace. "The most serious of all Tudor rebellions" saw 30,000 people in Yorkshire rise up against the religious reforms.

1526

Henry VIII loses interest in Anne's sister, Mary, and begins to court Anne. He sends her a series of love letters, but Anne refuses to be his mistress. Within a year Henry asks Anne to marry him and she accepts.

1533

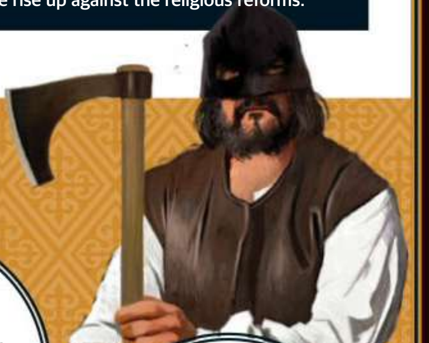
Anne is crowned queen consort, after years of fighting for an annulment of the marriage of Henry and Catherine. Anne is already pregnant with Elizabeth and in September of that year she is born, much to Henry's disappointment.

1534

The relationship between Anne and Henry becomes strained as Anne suffers a miscarriage. By the time she falls pregnant again in 1535, Henry is already courting Jane Seymour. Anne also miscarries this child, who appears to be male.

1536

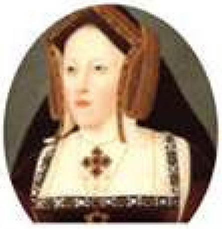
Various men are arrested on charges of adultery with Anne and treason against the king in a plot masterminded by Thomas Cromwell. Anne is taken to the Tower of London, tried and found guilty of adultery, incest and high treason.



1536

Anne is executed on a scaffold by a French swordsman brought in especially for the beheading. Before her death she praises Henry, perhaps to save Elizabeth and her family from any further implications, but refuses to admit her guilt.

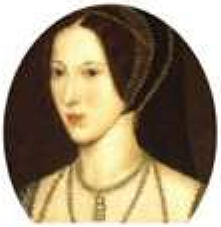
WIFE HEAD-TO-HEADLESS



Catherine of Aragon

DATES OF MARRIAGE:
1509-1533
WHAT HAPPENED TO HER?
DIVORCED

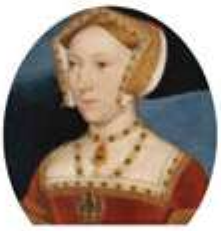
Catherine was first married to Arthur, Henry's older brother, but was betrothed to Henry after his death. Catherine had a string of failed pregnancies and finally gave birth to a healthy daughter in 1516 – Mary. Although Henry seemed to adore Catherine, the marriage was annulled on the basis that she had been his brother's wife.



Anne Boleyn

DATES OF MARRIAGE:
1533-1536
WHAT HAPPENED TO HER?
BEHEADED

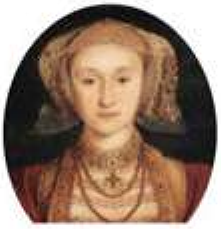
Clever, pretty and witty, Anne soon attracted Henry's attention as the handmaiden of Catherine of Aragon. She refused to become a mistress and demanded he wed her. This led Henry to seek a divorce and start the English Reformation. Although Anne produced the would-be heir, Elizabeth, her failure to produce a son had Henry plot her downfall.



Jane Seymour

DATES OF MARRIAGE:
1536-1537
WHAT HAPPENED TO HER?
DIED AFTER GIVING BIRTH

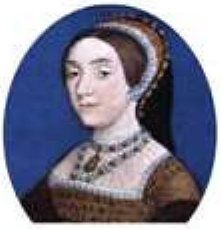
It is highly likely that Jane Seymour was the mistress who disposed of Anne, and Seymour married Henry shortly after Anne's execution. Although she was the lowest in birth of Henry's wives, her giving Henry his much-desired male heir, Edward, secured his everlasting love. She died from post-natal complications and Henry was later buried next to her.



Anne of Cleves

DATES OF MARRIAGE:
6 JANUARY 1540 - 9 JULY 1540
WHAT HAPPENED TO HER?
DIVORCED

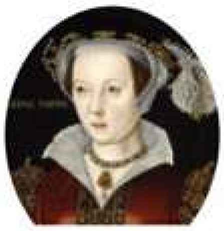
A German princess, Anne was selected by Henry from nothing more than a portrait. Henry asked the artist to paint Anne realistically, and not to flatter her. However, when Henry met her he was greatly disappointed and was not enthusiastic about the marriage. The marriage provided a vital alliance with the Germans, but was later annulled.



Catherine Howard

DATES OF MARRIAGE:
1540-1541
WHAT HAPPENED TO HER?
BEHEADED

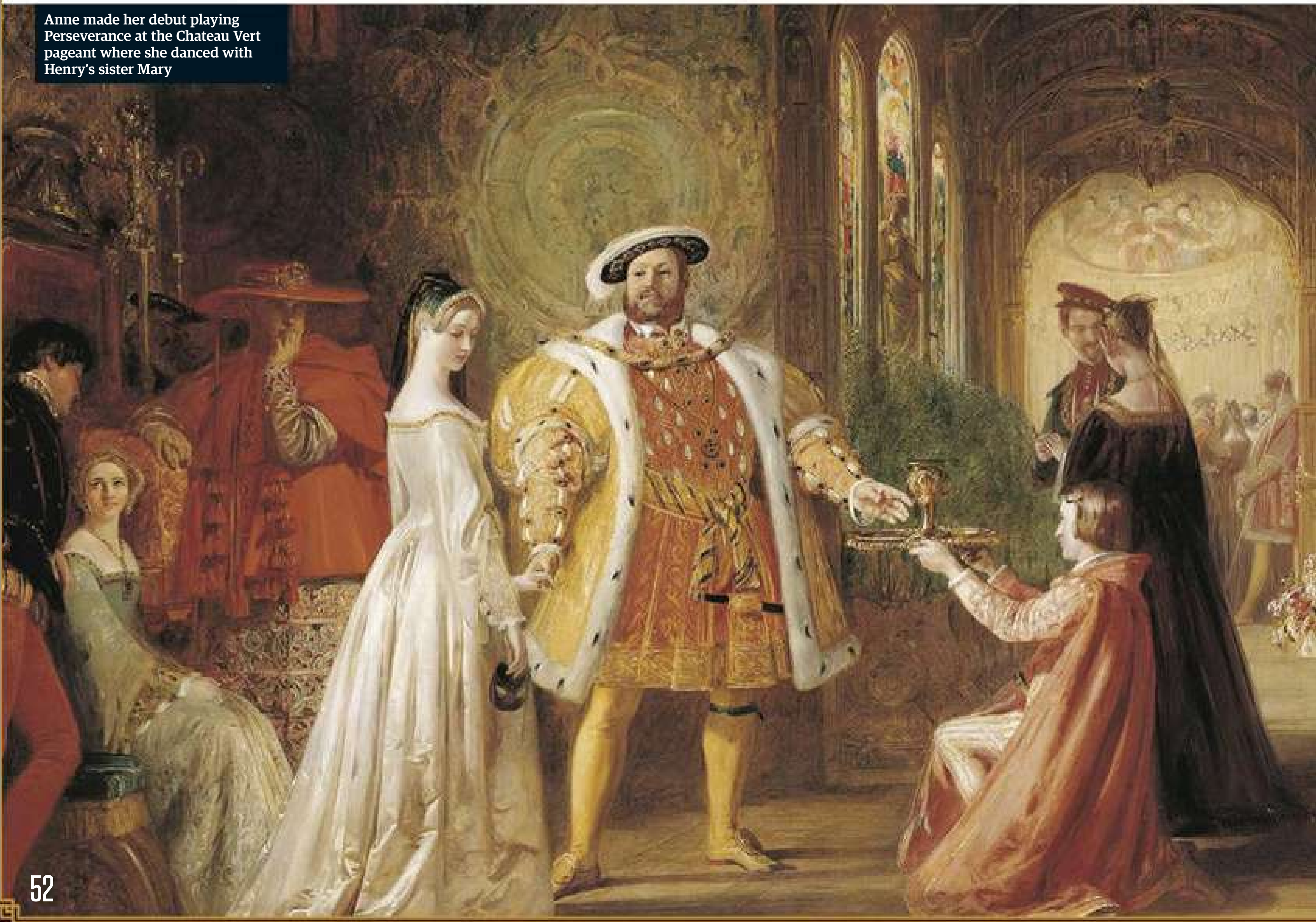
Referred to by Henry as his "rose without a thorn", the young and pretty woman quickly caught the king's eye and the two were soon married. However, in early-1941 Howard allegedly embarked upon an affair with Henry's male courtier, Thomas Culpepper. Howard was charged with treason and adultery, found guilty and executed.



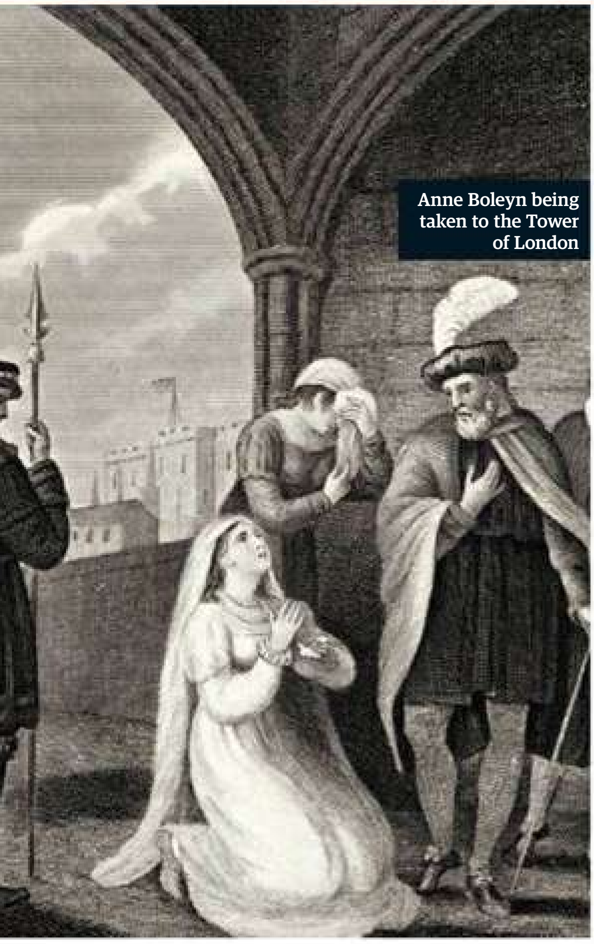
Catherine Parr

DATES OF MARRIAGE:
1543-1547
WHAT HAPPENED TO HER?
SURVIVED

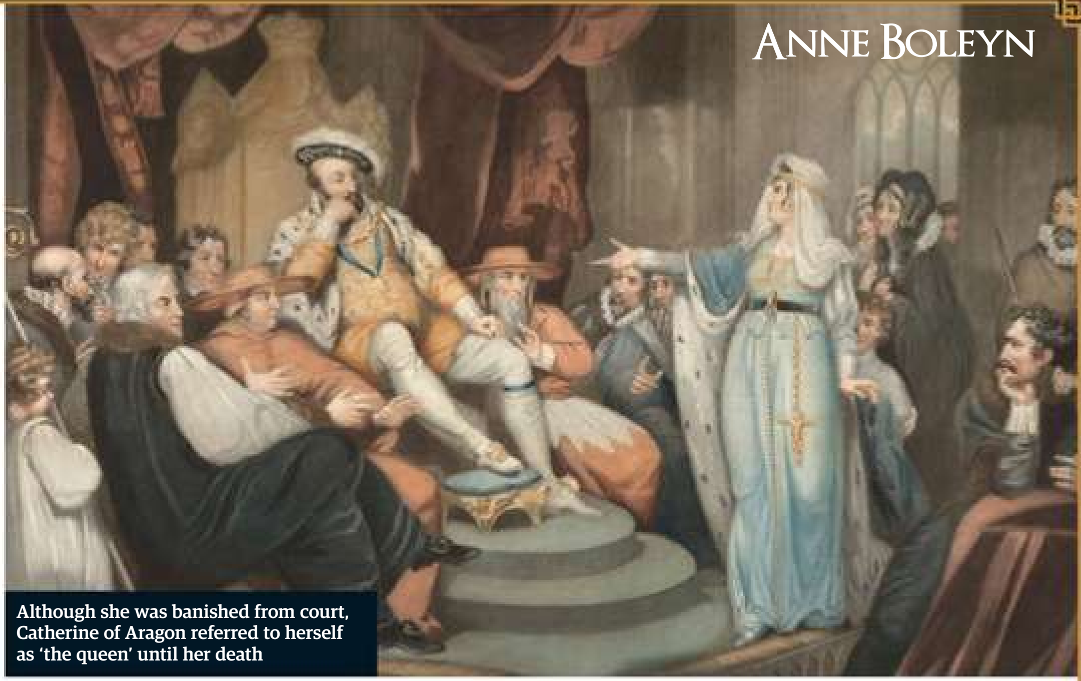
Having had four husbands of which Henry was the third, Catherine Parr was the most married queen in English history. Her friendship with Henry's daughter Mary caused her to catch the king's attention. As queen, Catherine worked to restore Henry's court as a family home, and helped strengthen the Tudor line, thereby ensuring Elizabeth's eventual succession.



Anne made her debut playing Perseverance at the Chateau Vert pageant where she danced with Henry's sister Mary



Anne Boleyn being taken to the Tower of London



Although she was banished from court, Catherine of Aragon referred to herself as 'the queen' until her death

of the monasteries should go, and he had seen where Anne had sent her other enemies, such as Thomas More – to the chopping block. Under Henry's instructions, Cromwell began to investigate a variety of adulterous accusations against Anne and arrested Mark Smeaton, a court musician. Mark confessed to the charges, very likely under torture, and gave the names of a selection of other men under the same charges, including Anne's own brother – George.

Anne was far from blind to what was going on; she was very aware of what these investigations meant for herself. In April 1536, just before Smeaton was arrested, Anne came to Henry carrying the young Elizabeth in her arms and appealed to him directly. However, it seemed that her power over him had finally been extinguished. On 1 May Henry left the Mayday jousts without saying goodbye to Anne, and the following day she was arrested – it would be the final time she would ever see her husband.

> The legend that Anne had a sixth finger on her hand was likely a vicious rumour

In a cruel twist of irony, Anne's prison cell was the very same place in the Tower of London that she had resided on her coronation night. For Anne, a woman for whom control had always been of vital importance, the hopelessness of her situation had a profound effect. Within a day of imprisonment her state of mind differed from optimism and giddiness, to bouts of hysteria and extreme depression. The queen would sob uncontrollably one moment, then burst into shocking laughter the next. Her enemies were very cunning with the methods in which they condemned Anne; four of the men were tried and found guilty of adultery and treason before her own trial took place, making it nigh-on impossible for her to prove her innocence.

Anne was forced to stand before a council of peers including her once-love Henry Percy and her own uncle in the very same room she had enjoyed her coronation feast. There was very little evidence against Anne or any of the men accused, but the king had made his will known. When the verdict was announced, Anne collapsed and had to be carried out of the courtroom. Guilty. She had been condemned to death.

On 17 May, the five condemned men were executed, including Anne's beloved younger brother, and on 19 May Anne herself was led to the scaffold. Her marriage to the king had already been deemed invalid, and he was not present to witness the final moments of the woman who had captivated him for so many years. Anne's body was buried in an unmarked grave in the Chapel of St Peter, which adjoined the Tower Green.

For the surviving Boleyns, the fall was so great they could not hope to recover from it. Anne's mother, Elizabeth, died a year later and she was soon followed by her husband. Mary died in 1542, leaving behind only a young daughter and the son that may have been Henry's. Less than eight years after Anne's coronation every immediate member of the Boleyn family was dead. Their rise had been magnificent, their fall akin to a Greek tragedy.

The future for Henry was almost as stormy. 11 years and four wives later, Henry's greed and debauched lifestyle finally got the better of him and he died aged 55. The handsome, athletic and charismatic young man that he had wished to portray himself as had faded long ago, and the portrait of a lustful, violent and egotistical king remained. Although he had finally produced the son he was so obsessed with obtaining, the young Edward VI died aged just 15.

But unbeknownst to him, he had already produced the strong, long-lasting heir he desired. Elizabeth, the daughter Anne had borne who he had been so disappointed with, went on to rule England for 45 years. She became one of the most famed and celebrated rulers in the nation's history, and Henry and Anne's most enduring legacy.

SPOUSE WARS

Henry VIII's six wives is a lot for British leaders, but it pales in a worldwide context

Fat'h Ali Shah Qajar PERSIAN, 1772-1834

NUMBER OF MARRIAGES: 158

Sobhuza II SWAZI, 1899-1982

NUMBER OF MARRIAGES: 70

Mswati III SWAZI, 1968 - PRESENT DAY

NUMBER OF MARRIAGES: 15

Amenhotep III EGYPTIAN, ??? - 1353 BCE

NUMBER OF MARRIAGES: 317

Abdul Hamid II OTTOMAN, 1876-1909

NUMBER OF MARRIAGES: 13

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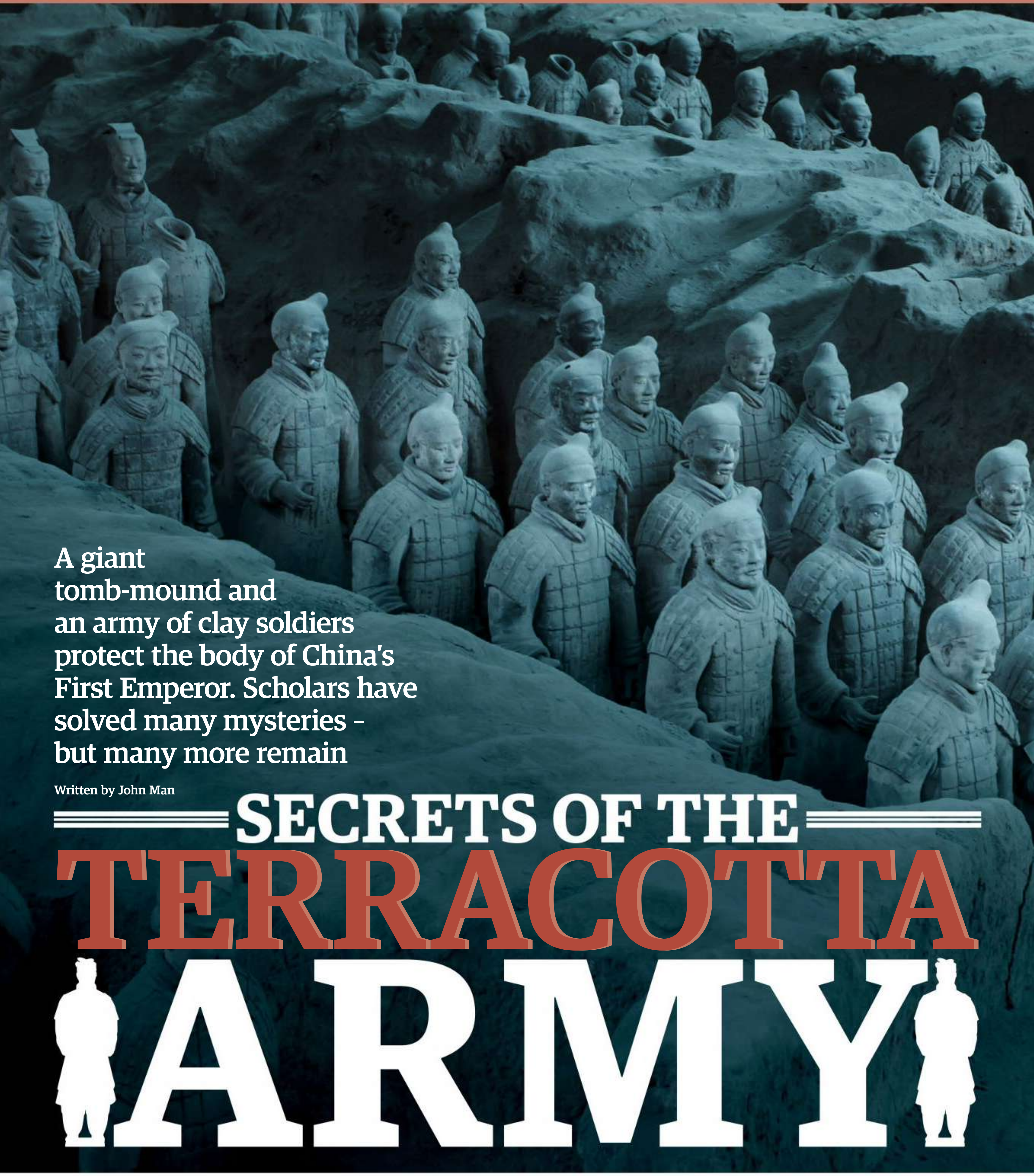


A giant tomb-mound and an army of clay soldiers protect the body of China's First Emperor. Scholars have solved many mysteries – but many more remain

Written by John Man

SECRETS OF THE TERRACOTTA ARMY

March, 1974. Orchards and fields near Xian, north-central China. In the background is a conical hill. We're in an orchard, but the trees are bare and the grass is dusty. There's a drought. Five peasants, the Yang brothers, are digging a well. They are two metres (six feet) down, taking turns to dig while the others haul out soil in baskets. Suddenly the one in the pit, Yang Zhefa, shouts: 'An earth-god!' Sticking out of the soil is a head made of clay: two eyes, long hair tied in a bun, a moustache. This is bad luck, because it is underground, where the dead live. The men toss the head aside and keep digging. But some local kids see it and throw stones at it. A few adults arrive. An old woman takes the head home and puts it on her table. Meanwhile, the Yang brothers make other finds: bricks, bits of bronze and some arrowheads.

A month later, a 24-year-old archaeologist named Zhao working in a local museum hears about the finds. He gets on his bike, rides to the orchard and finds the Yangs, still busy on their well. By now there are more clay bits on their heap of rubbish: legs, arms, two more heads. He takes charge of matters and has the finds brought to his museum in nearby Lintong. He guesses they are important, because he knows the historical background.

Over two thousand years ago, this was the heartland of the state known as Qin (pronounced Chin). That hill in the background, a giant pyramid of earth, was the tomb of the emperor who united China's warring states into a single nation. Zhao, like most educated people, knew all about the First Emperor, because the story of his rise was told in dramatic terms by Sima Qian, one of China's greatest historians, writing a century after the events he describes.

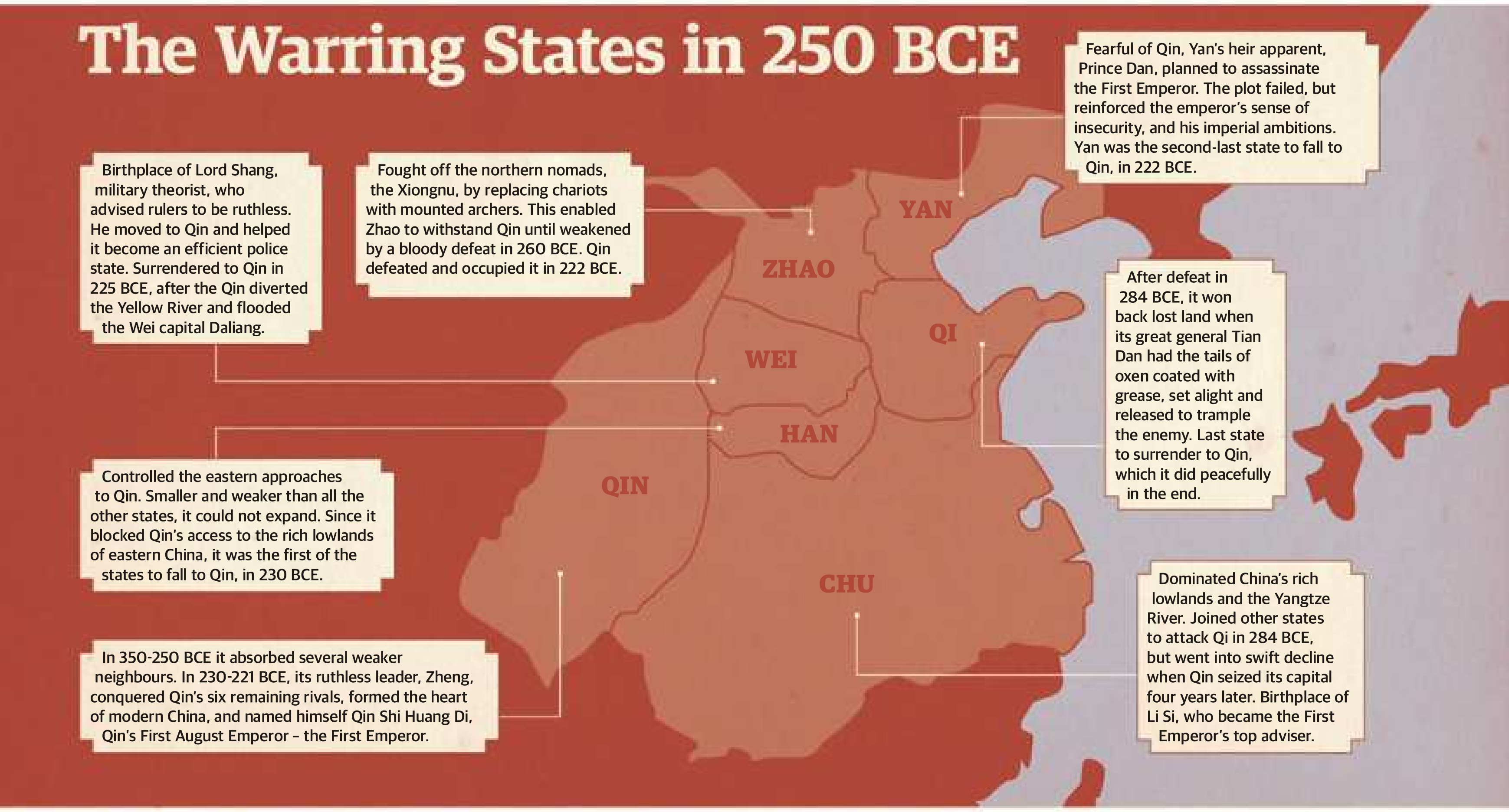
Qin had been one of seven warring states, all with their own armies and systems of government, all rivalling each

JOHN MAN

Author Bio

John Man specialises in the history of Mongolia and north China, with a dozen books in print. They include *The Terracotta Army*, *The Great Wall* and *Genghis Khan: Life, Death And Resurrection*, which has become a best-seller in 21 languages. His latest book is *The Mongol Empire*.

The Warring States in 250 BCE



Fearful of Qin, Yan's heir apparent, Prince Dan, planned to assassinate the First Emperor. The plot failed, but reinforced the emperor's sense of insecurity, and his imperial ambitions. Yan was the second-last state to fall to Qin, in 222 BCE.

Birthplace of Lord Shang, military theorist, who advised rulers to be ruthless. He moved to Qin and helped it become an efficient police state. Surrendered to Qin in 225 BCE, after the Qin diverted the Yellow River and flooded the Wei capital Daliang.

Fought off the northern nomads, the Xiongnu, by replacing chariots with mounted archers. This enabled Zhao to withstand Qin until weakened by a bloody defeat in 260 BCE. Qin defeated and occupied it in 222 BCE.

After defeat in 284 BCE, it won back lost land when its great general Tian Dan had the tails of oxen coated with grease, set alight and released to trample the enemy. Last state to surrender to Qin, which it did peacefully in the end.

Controlled the eastern approaches to Qin. Smaller and weaker than all the other states, it could not expand. Since it blocked Qin's access to the rich lowlands of eastern China, it was the first of the states to fall to Qin, in 230 BCE.

In 350-250 BCE it absorbed several weaker neighbours. In 230-221 BCE, its ruthless leader, Zheng, conquered Qin's six remaining rivals, formed the heart of modern China, and named himself Qin Shi Huang Di, Qin's First August Emperor – the First Emperor.

Dominated China's rich lowlands and the Yangtze River. Joined other states to attack Qi in 284 BCE, but went into swift decline when Qin seized its capital four years later. Birthplace of Li Si, who became the First Emperor's top adviser.

> "He had artisans make thousands of full-size warriors out of clay"

other. But Qin had made itself the most powerful by becoming a military dictatorship, a police state in which the ruler had total control. For example, as one chronicler recorded, "Anyone who failed to report criminal activity would be chopped in two at the waist." The system worked. By 238 BCE, Qin was a rich, self-confident kingdom under the control of a new 22-year-old ruler, King Zheng.

Zheng was fanatical about security. He thought he could make Qin even safer by using his tough, mobile army to extend his control over the other six states. To ensure victory, he turned his nation into a war machine fuelled by good food supplies, ruthless tax gatherers, military service for almost all men, and highly trained soldiers.

We have no details of his conquests, which started in 230 BCE, but in nine years he defeated all the other six kingdoms. In 221 BCE, he was master of a unified China, which gets its name from his kingdom. This was not China as it is today, just the central and northern bits, but ever since then, the idea of unity has been at the heart of Chinese history. Zheng gave himself a suitably grand title: Qin Shi Huang Di, meaning Qin (or China) First August Emperor. Non-Chinese usually call him the First Emperor.

Now he needed to weld his conquests together, with a revolution in government and vast building projects that would control his people and keep enemies out. First, he ordered a revolution in administration, setting up a government of 36 regions, each divided into counties, and each with both civil and military governors, overseeing tax collectors and judges. All the different systems of law, money, weights, measures, even styles of clothing were standardised.

And dissent of any kind was crushed. According to Sima Qian, when a scholar dared criticise the emperor for breaking with tradition, Prime Minister Li Si pointed out that the roots of rebellion lay with scholars and books: "Those who use the past to criticise the present should be put to death!" So the royal archives "were all destroyed. How regrettable!" – burned, said Sima Qian. This episode, known as the Burning of the Books, is generally accepted as true, as is another claiming that "over 460" scholars were buried alive. But Sima Qian, writing during the next dynasty, was keen to discredit his predecessors, and experts question the true meaning of the words widely translated as "burned" and "buried". Anyway, countless Qin books survived. These record cruel punishments, including being torn apart by carriages and being boiled to death. But there are no records of the execution of scholars. It seems the emperor's new legal system actually prevented gross abuses of power.

Peace had one startling result: the king's vast army

Many of the damaged terracotta warriors have been meticulously pieced back together

The level of detail in the terracotta statues' design is astounding

Every terracotta warrior discovered so far has a unique feature

The Emperor's Greatest Achievements

Unification

The First Emperor is referred to as China's First Unifier. There have been many others since, the latest being Mao Zedong, who created Communist China from the ruins of war and revolution in 1949. There have been many periods of division and China has changed shape often. Today's China is 3.4 times the size of Qin. But for 2,000 years, China has looked back to the First Emperor as a symbol of the ultimate ideal – unity.

Standardisation of coins, axles, colours & weights

The Qin Empire was held together by a series of measures that made Qin standards universal. Black was the colour of flags and uniforms. Every state abandoned its own coins for round copper ones with a square hole in the middle. Cartwheels were given a single gauge, so that they all ran in the same ruts. Weights and measures became uniform. Laws and order was harsh but equal.

Standardisation of writing

China had had a script for 1,500 years. It changed with the centuries and each state had its own variant. Under the First Emperor, all regional variations gave way to a single 'seal script'. Perhaps this was his most significant reform, because all officials could understand his orders and each other, whatever their dialects. Today, China's script still binds the nation together. Mandarin speakers may not understand spoken Cantonese, but both understand the same written characters.

Roads

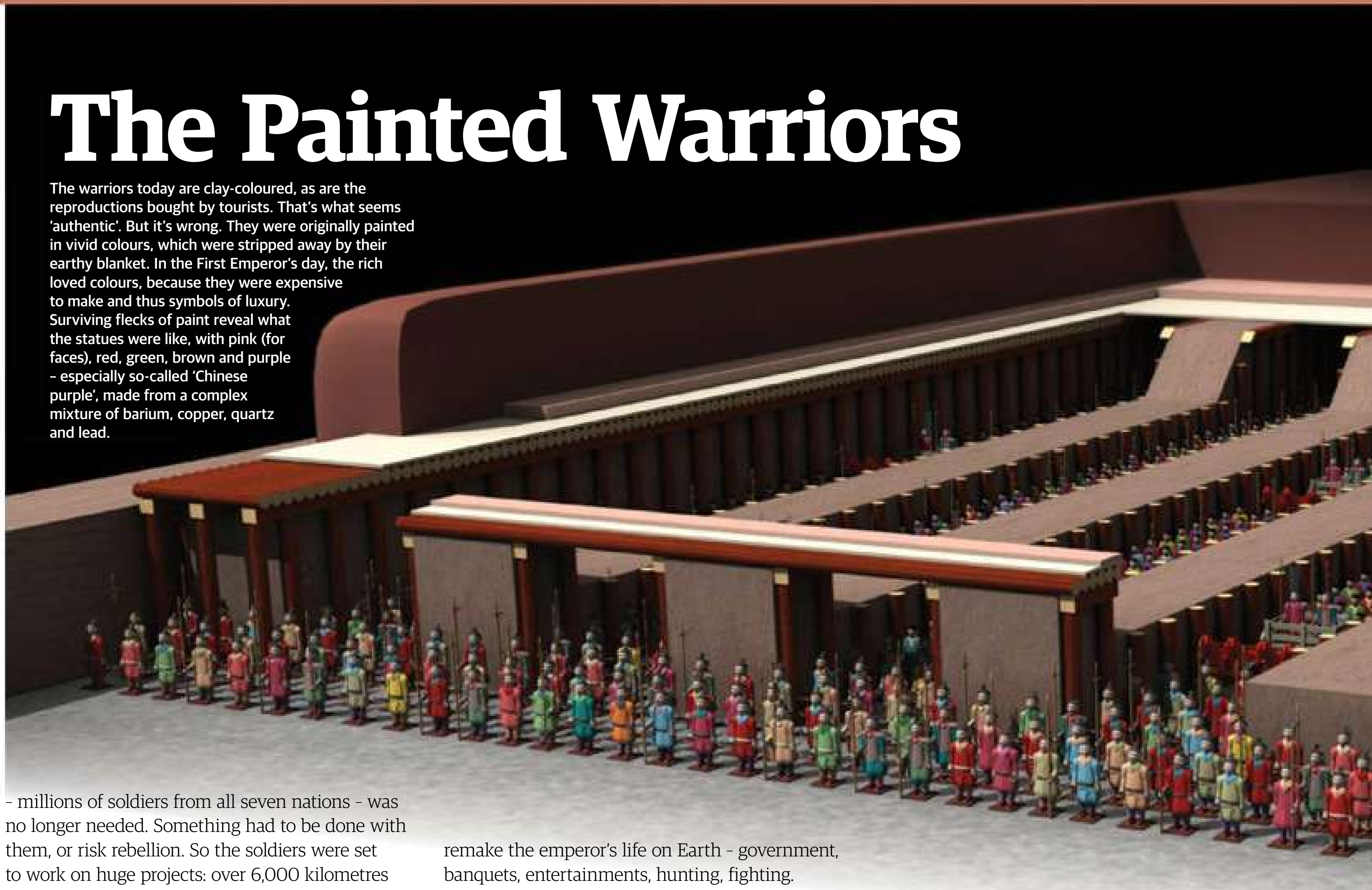
Fast travel was vital for messengers, troops and royal retinues, so the emperor put his labourers to work building roads, almost 7,000km (3,730mi) in all. All the nation's 270 palaces were connected. In part, this was for security. He travelled between them in secret and executed anyone who revealed where he was. One of the roads ran 800km (497mi) northward across the Ordos semi-desert so that troops and workers could get to the border – and the Great Wall – as quickly as possible.

Great Wall of China

This was nothing like today's Great Wall, which dates from 1,500 years later. At the time, there were many walls. After unification, there was only one enemy; the nomadic 'barbarians' of the northern grasslands. Fearsome mounted archers, they often galloped south on raids. The emperor's huge workforce joined up many small walls along the northern borders of Zhao and Yan, creating a single barrier stretching across northern China for 2,500km (1,500mi).

The Painted Warriors

The warriors today are clay-coloured, as are the reproductions bought by tourists. That's what seems 'authentic'. But it's wrong. They were originally painted in vivid colours, which were stripped away by their earthy blanket. In the First Emperor's day, the rich loved colours, because they were expensive to make and thus symbols of luxury. Surviving flecks of paint reveal what the statues were like, with pink (for faces), red, green, brown and purple – especially so-called 'Chinese purple', made from a complex mixture of barium, copper, quartz and lead.



- millions of soldiers from all seven nations - was no longer needed. Something had to be done with them, or risk rebellion. So the soldiers were set to work on huge projects: over 6,000 kilometres (3,730 miles) of paved roads, half a dozen royal palaces, military bases, and - most famously - the first Great Wall.

One the First Emperor's grandest projects was his tomb, built near the ancient capital, Xian, at the foot of a sacred mountain, Mount Li. Records claim that 700,000 worked on it, but 40,000 is a more accurate figure, working for a year to dig out a pit for the tomb itself. Later, after his death, the tomb would be covered with the hill that is still there today - 50 metres (164 feet) high, 350 metres (1,148 feet) per side; the size of the Great Pyramid, though made of earth, not stone.

What was it all for? The answer is: to live forever in the spirit world. The emperor, like his whole society, was obsessed with life after death. He believed the next world mirrored this one, and that a dead person needed familiar objects in the grave to recreate life. The rich and powerful needed big tombs, filled with 'grave goods', like chariots, weapons, animals and servants, both real ones, killed and buried with their lord, and models, for a life-like image could in some magical way become 'real' in the spirit world. Everything was designed to remake the emperor's life on Earth - government, banquets, entertainments, hunting, fighting.

The tomb itself was perhaps devoted to government. Sima Qian says it contains a model of the empire, with the rivers picked out in flowing mercury, the night sky portrayed in the ceiling, and all defended by crossbows ready to fire on intruders. It sounds unlikely, but in 1982 archaeologists probed the tomb with 560 drillings that revealed the outlines of a building and slight traces of mercury vapour. The truth will only be known if and when the tomb is opened.

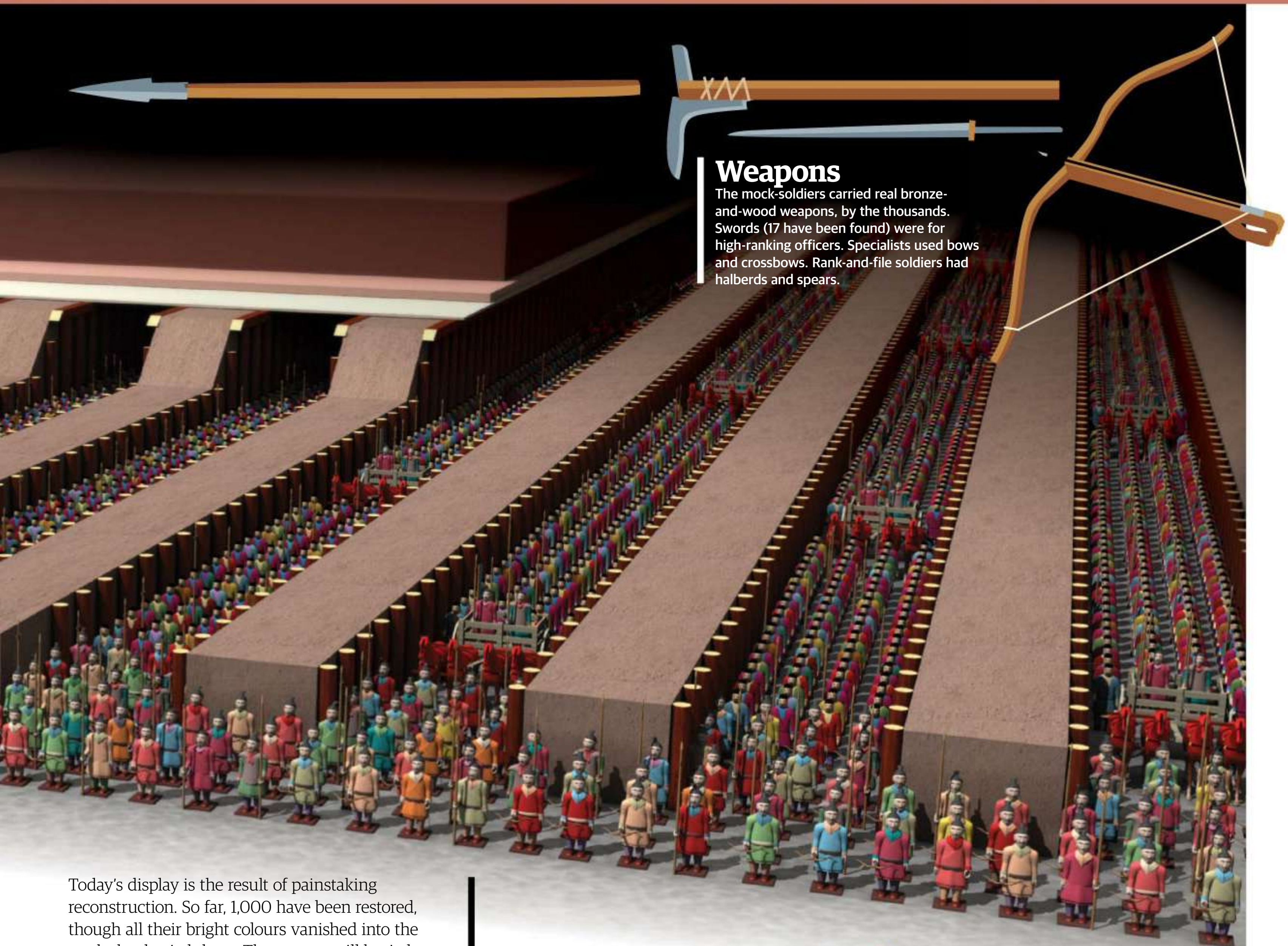
> "To ensure victory, he turned his nation into a war machine"

But the emperor would also need an army. So he commissioned something totally original and unique. He had his artisans, hundreds of them, make thousands of full-size warriors out of clay, all painted in vivid colours and carrying real bronze weapons (which was why they had to be full size).

Much of this work must have been done before his death, of some unspecified cause at the age of 50 in 210 BCE. For his burial, tens of thousands of workers rushed to finish the tomb and its many outlying graves. The terracotta warriors were placed in three pits 1.5 kilometres (0.93 miles) to the east of the tomb. Well armed with spears, lances, swords and crossbows, they were lined up on a tiled floor as if on a parade-ground, ready to help their lord fight off spirit armies coming to take over his empire. The pits, nine metres (30 feet) deep, were roofed with wooden beams, twice as thick as telegraph poles, weighing 500 kilograms (1,100 pounds) each, over 6,000 in all. The beams were covered with matting, on top of which workers piled three metres (ten feet) of earth.

Then they vanished. There were no records. Sima Qian makes no mention of them. After a generation or two, they were forgotten, the memory of them erased by the chaos and civil war that destroyed the Qin Empire.

So when the warriors were found in 1974, they were a total surprise. And when archaeologists got to work there was another surprise: not a single soldier was found intact. All had been shattered.

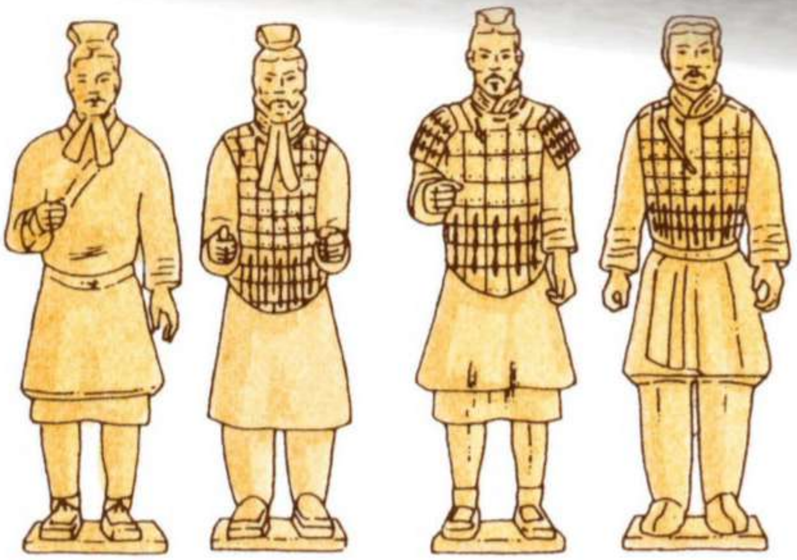


Weapons

The mock-soldiers carried real bronze-and-wood weapons, by the thousands. Swords (17 have been found) were for high-ranking officers. Specialists used bows and crossbows. Rank-and-file soldiers had halberds and spears.

Today's display is the result of painstaking reconstruction. So far, 1,000 have been restored, though all their bright colours vanished into the earth that buried them. The rest are still buried, awaiting techniques that can ensure better preservation. No one knows exactly how many there are: the 7,000-8,000 is an estimate, as is the number of 670 horses. But this is not enough for an army. The emperor's real army numbered in the tens of thousands. Perhaps there are more to be discovered. After all, there have been many other finds over the years, including horse skeletons, tombs of officials, other types of terracotta statues, bronze birds, and two astonishing half-sized chariots, complete with horses and drivers.

But the star turn is the army, now partly restored from jigsaw puzzles of bits and pieces. Not a single one in the main pit has been found complete. All were shattered – but how? Fire was somehow responsible, for the earth above them was baked solid. But how did the fire start, and how could it break every single statue?

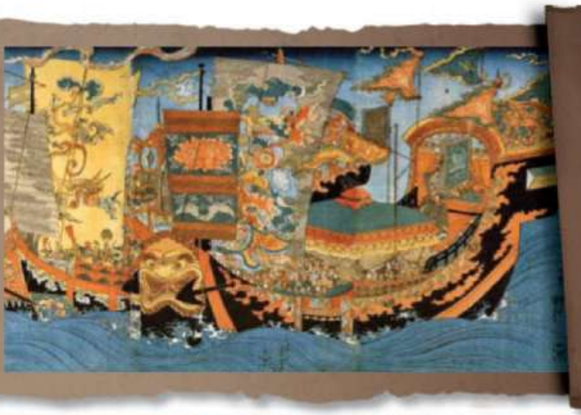


Unique designs

Of the 7,000-8,000 buried and broken figures, about 1,000 have been restored. Each one is different. They are not portraits, but ideals – handsome, well built, serene. The artists just varied the details, like eyebrows, beards and moustaches.

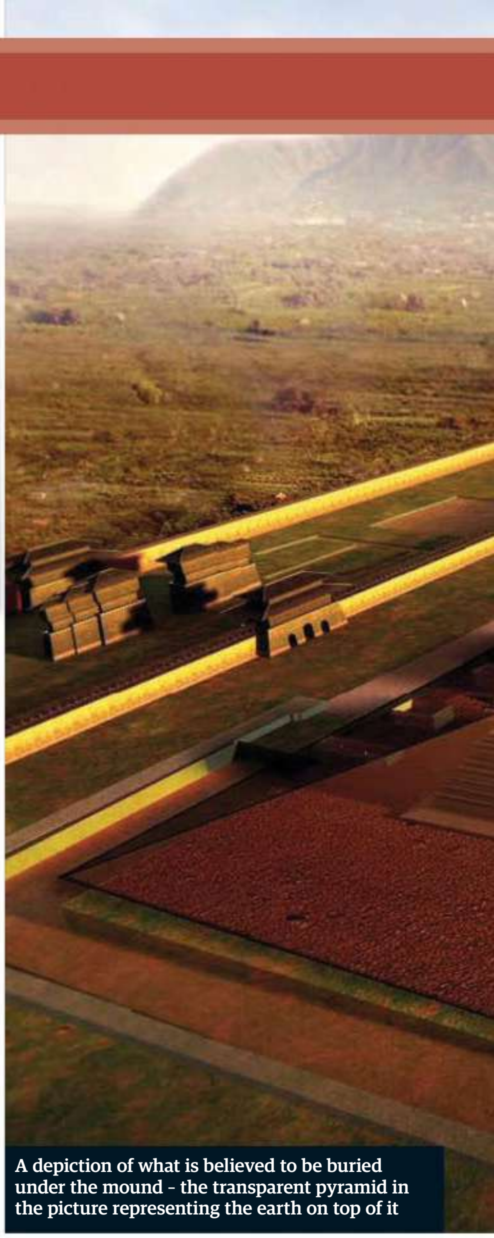
The Elixir of Life

Some people taught that the body could be made incorruptible by death, and so become a xian, an immortal. For centuries, Daoists experimented with elixirs – mixtures including gold, mercury, arsenic and lead – undeterred by the often-fatal results. The First Emperor believed in the elixir, and took seriously a charlatan named Xu Fu, who told him it could be found in islands off the east coast. Xu promised to find it, but did nothing. In 210 BCE, the emperor, when touring the east, found and questioned Xu, who claimed he had been prevented from sea-travel by a large fish. The emperor, deranged by paranoia, believed him and fired arrows into the sea to kill the non-existent monster. Soon afterward, he died.



Many terracotta horses were also made for the emperor's tomb

Restoration of the terracotta warriors is currently in progress



A depiction of what is believed to be buried under the mound – the transparent pyramid in the picture representing the earth on top of it

To answer, we must become detectives. It must have had something to do with the rebels who rose against the Qin dynasty after the First Emperor's death in 210 BCE, opening eight years of civil war before the Han Dynasty took over in 202 BCE. In a film shown to tourists in the Terracotta Army museum, rebel soldiers break through doors and torch the place. But there were no doors, no mass break-in. There is no evidence of the roof being dug up. So there was no oxygen to sustain a fire. That's the mystery: a fire, but no means to keep it burning.

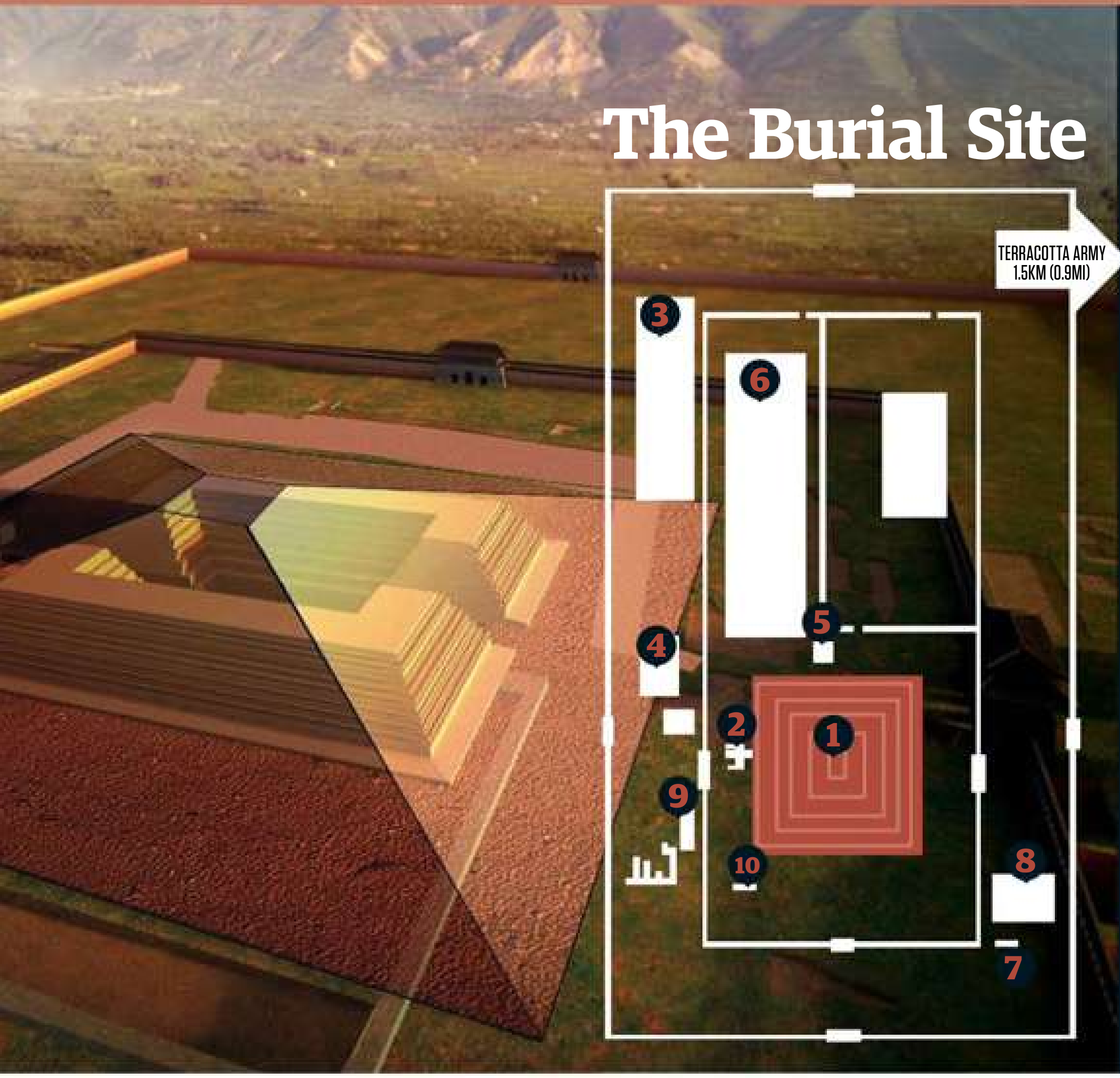
This might have happened: As the empire fell apart, a rebel army approached the tomb, with no army to stop them. Historian Ban Gu, writing 200 years later, says the Qin generals advised: "There are forced labourers at the Mt Li grave complex. Grant them amnesty and supply them with arms." This was done, which temporarily blocked the rebel army, and also stopped work on the First Emperor's tomb. This explains why there are three pits full of soldiers – but a fourth pit is completely empty, awaiting more warriors, which never arrived.

In Lintong, rebels knew about the Terracotta Army from the hastily recruited labourers. So in early 206 BCE, with the Qin palaces ablaze, rebels arrived at the tomb-site, eager for more booty. The vast tomb itself was too much of a challenge. But they knew of the buried army, knew also that it contained real weapons.

There was no time to dig up the earth and beams. The best way in was to dig straight down. The evidence is there. In Pit No 2, a hole like a small mineshaft bypasses the roof and enters the pit. It's a metre (three feet) or so wide, big enough for one person at a time to enter, big enough to hand weapons to the surface.

Imagine the first rebel soldier breaking through, seeing nothing, calling for a blazing torch. Its flickering light reveals the front lines of clay soldiers in their original painted finery, with pink faces and brightly coloured coats. In cavernous corridors, the soldiers range backward into darkness and – most importantly – all armed. For fighting me, it's a treasure-trove.

The Burial Site



1. The tomb
The burial mound is some 50-75m (164-246ft) high. Soundings suggest that beneath it is a stepped half-pyramid up to 150m (492ft) wide with two entrances. Inside, presumably, is the emperor's coffin.

2. Pit of the Bronze Chariots
Two half-size chariots were found in 1980. One (the so-called High Chariot) was open, the other (the 'Comfortable Chariot') was enclosed, for the emperor's spirit. Both were crushed, but are now restored.

3. Servants' quarters
The worship of the emperor needed a staff of hundreds. Here they lived, with offices and washing facilities.

4. Banqueting Room
It was probably used to provide meals for all the functionaries and to make the food offered every day to the emperor's spirit.

5. Resting Hall
This 57 x 62m (187 x 203ft) complex was above ground; the centre for the cult devoted to the emperor.

6. Side Hall
In these above-ground buildings, family members would prepare themselves for the frequent rituals of mourning and worship.

7. Pit of the 'Acrobats'
12 figures, dressed in skirts. 11 of them are perhaps acrobats. One is heavily built, possibly a wrestler.

8. Stone-armour Pit
Discovered in 1998, this pit contains about 120 suits of limestone armour, all broken. Limestone does not make real armour. It is too heavy and too fragile. It was probably a symbolic defence against evil spirits.

9. Menagerie Pits
Several pits that each contain the skeleton of a bird or animal. Possibly they symbolize the First Emperor's hunting-ground or zoo.

10. Pit of the Officials
Discovered in 2000, it contained 20 horse skeletons and 12 terracotta figures. Long sleeves and writing gear make clear that they are officials.

Others slither down the hole, holding more torches. The intruders begin to weave and shove their way through, grabbing weapons, passing them back to the tunnel. "There is no evidence of organised destruction," says the Army's senior archaeologist, Yuan Zhongyi. "We found remains of warriors which seem to have fallen in a zig-zag pattern, which suggests they were pushed over as people forced their way through."

Then, in the chaos, something cut the break-in short.

Fire. A torch smouldering beside a wooden pillar or one of the wooden chariots. For what happened next, we must rely on modern fire-protection engineers, like Joe Lally, an archaeologist with the US Department of the Interior's Bureau of Land Management in Albuquerque, New Mexico. In his computerised scenario, there was no exit for the smoke. The corridors filled with smoke in about four minutes, forcing the thieves to crawl to the exit, toppling more warriors and horses. They have only a few precious minutes to escape, and there is only room for one at a time up the exit shaft. They all made it because no charred skeletons were found with the smashed soldiers.

There is something odd about this fire. It takes a powerful hold, but it needs a flow of oxygen to keep it going. There's not enough coming in through the small entrance.

> "A rebel army approached the tomb, with no army to stop them"

So the flames go out.

Yet we know fire destroyed the pit. How? This was a special sort of fire, like those that spread underground along seams of coal. Coal-seam fires are started by bush fires or lightning. There are thousands of them around the world, burning very slowly, for a very long time. One under the town of Centralia, Pennsylvania, has been smouldering for half a century and may go on doing so for another 250 years.

Imagine the scene: In the main pit, the flames are dead, the pit dark again, smoke drifting along the corridors. But the fire has found a home in the ceiling, where the earth keeps a lid on the fire. Traces of oxygen seep in, just enough to keep the ceiling smouldering. Slowly, the slow fire eats away at the beams. At some point, charred timbers fall, breaking a piece off a warrior or two. A section of earth follows.

And so it goes, for years, the warriors, chariots and crossbow-men crushed by the falling beams, the surface subsiding bit by bit, filled again by water-borne mud, until not a trace remains of what lies beneath, until the five Yang brothers find an earth-god while digging a well.

© Thinkstock; Adrian Mann; John Man/Terracotta Army Museum

VIKING RAIDERS

Portrayed as bloodthirsty pirates, pillaging innocent villagers, Vikings also ruled the waves with a lucrative trade network

Written by Frances White

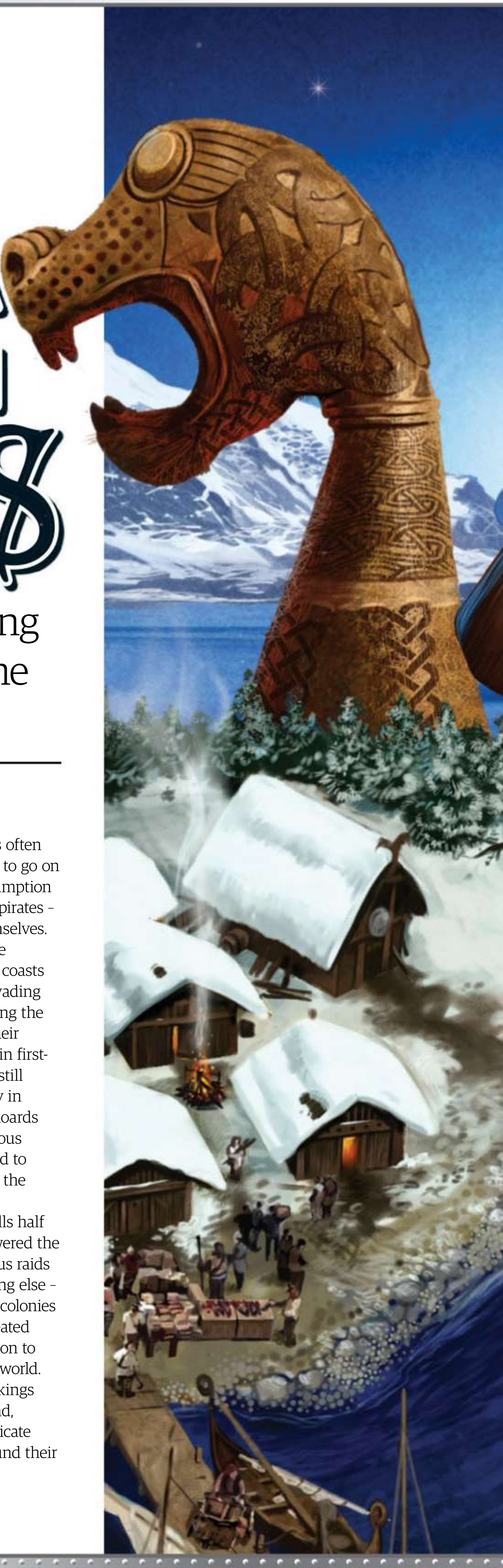
The great white sail cracked as the vicious Atlantic wind lashed against it, but still the ship sailed on. Long and sleek, the warship, crafted from mighty oak, crashed through the waves, sending a sharp spray of water across the deck. The men inside rowed as one, their mighty muscles straining as they plunged the oars deep into the water and drove the ship forward through the turbulent waves. Their strength alone brought the ship to land and they poured out onto the beach. Dressed in thick woollen tunics, the warriors were armed with an array of weapons, from long sharpened spears to hefty battle-axes. With a booming voice one man yelled to the others, thrusting his sword into the air, and the rest bellowed in response. Then onward he ran, as the united force thundered uphill against the billowing wind. Their destination? A coastal monastery bursting full of gold, gems and hefty food supplies ripe for the taking, and only a collection of quiet, unassuming monks to protect it.

This image of monstrous invaders laying siege to innocent monasteries and pillaging them of their precious items is the first one that leaps to mind when many are confronted with the word 'Viking'. The portrayal of the Norse tribesmen as rapists and pillagers is so prevailing that it's often forgotten that the word Viking itself means to go on an expedition. It is easy to fall into the assumption that these people were nothing more than pirates - taking from those too weak to defend themselves. And it is undeniable that this happened: the Viking invaders sailed from Scandinavia to coasts of the British Isles and beyond, invading villages and monasteries, killing the inhabitants and stealing their riches. It's spoken about in first-hand accounts and it's still being evidenced today in the reams of Viking hoards discovered from anxious townsfolk who hurried to hide their riches from the merciless invaders.

> Vikings had excellent hygiene, bathing at least once a week

However, this only tells half the story. Two things powered the Viking civilisation: the vicious raids they're famous for, and something else - trade. Not only did Vikings set up new colonies in the lands they invaded, but they also created powerful trade routes that helped their nation to become one of the most prosperous in the world.

For the majority of the year, the same Vikings who had pillaged the towns worked the land, tirelessly toiling in the field, or creating intricate and valuable ornaments and jewellery to fund their blossoming civilisation.



VICIOUS VIKINGS

Meet Scandinavia's most terrifying plunderers

ERIK THE RED 951 – 1003

Infamous for: Being exiled from Iceland for murder. He went on to colonise Greenland

GUTHRUM UNKNOWN – 890

Infamous for: Waging war against the king of the West Saxons - Alfred the Great

INGVAR THE FAR-TRAVELLED UNKNOWN

Infamous for: Pillaging the shores of the Caspian Sea

RODULF HARALDSSON UNKNOWN – 873

Infamous for: Leading raids in Britain, France and Germany

IVAR THE BONELESS UNKNOWN

Infamous for: Invading Anglo-Saxon kingdoms of England using the Great Heathen Army

Viking voyages

As expert ship builders, the Vikings were able to voyage further and wider than any civilisation before…

Centuries before Christopher Columbus would stumble upon the land now known as America, the Vikings had claimed the Atlantic Ocean as their own backyard. They had mastered Russia's river system and reached the Middle East; their impressive voyages helped them to become leaders of a rapidly developing world and this new Viking civilisation thrived on the power of a single creation: the ship.

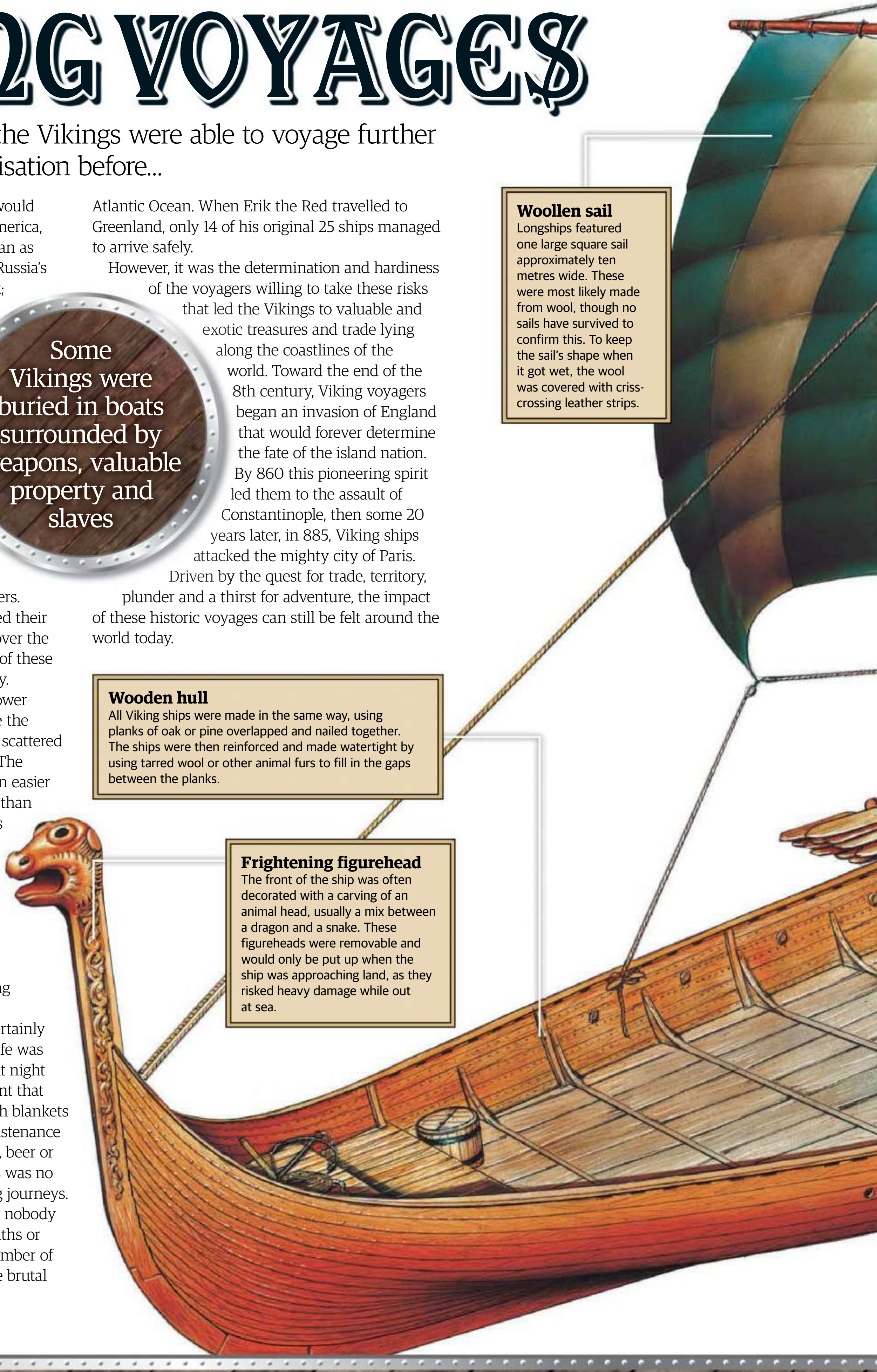
The entire Viking society was built around their ships, which were bigger, lighter and faster than any before. These vessels had been perfected over many years, with the power to brave the vicious storms of the Atlantic Ocean, but also the sleek construction to skim through shallow rivers. These powerful and efficient ships enabled their mighty passengers to create colonies all over the world, and the building and maintaining of these vessels became the basis of Viking society.

Vikings were using their mighty sea power to trade around the coast of Europe while the British Empire was merely a collection of scattered kingdoms unable to defend their shores. The Viking sailors were aware that it was often easier to take the same journey by water rather than land, with some journeys taking five days by sea, compared to a month on land, and they used this to their advantage. Longer voyages were carried out by those settling in strange and exciting foreign lands, and the Viking civilisation spread to Iceland, Greenland, and even to Canada and North America.

The image of a Viking longboat crashing through the waves with its fierce dragon figurehead and its long, sleek curves is certainly an inspiring one, but for those onboard, life was not quite so glamorous. With no shelter, at night the sailors used the sail as a makeshift tent that they would sleep under, shivering beneath blankets or animal skin sleeping bags. The only sustenance would be dried or salted meat with water, beer or sour milk to drink. The sinking of vessels was no great tragedy, but rather expected on long journeys. There would be no rescue sent as usually nobody knew about sunken ships for weeks, months or even years. It was not unusual for any number of ships to go missing on voyages across the brutal Atlantic Ocean. When Erik the Red travelled to Greenland, only 14 of his original 25 ships managed to arrive safely.

However, it was the determination and hardiness of the voyagers willing to take these risks that led the Vikings to valuable and exotic treasures and trade lying along the coastlines of the world. Toward the end of the 8th century, Viking voyagers began an invasion of England that would forever determine the fate of the island nation. By 860 this pioneering spirit led them to the assault of Constantinople, then some 20 years later, in 885, Viking ships attacked the mighty city of Paris. Driven by the quest for trade, territory, plunder and a thirst for adventure, the impact of these historic voyages can still be felt around the world today.

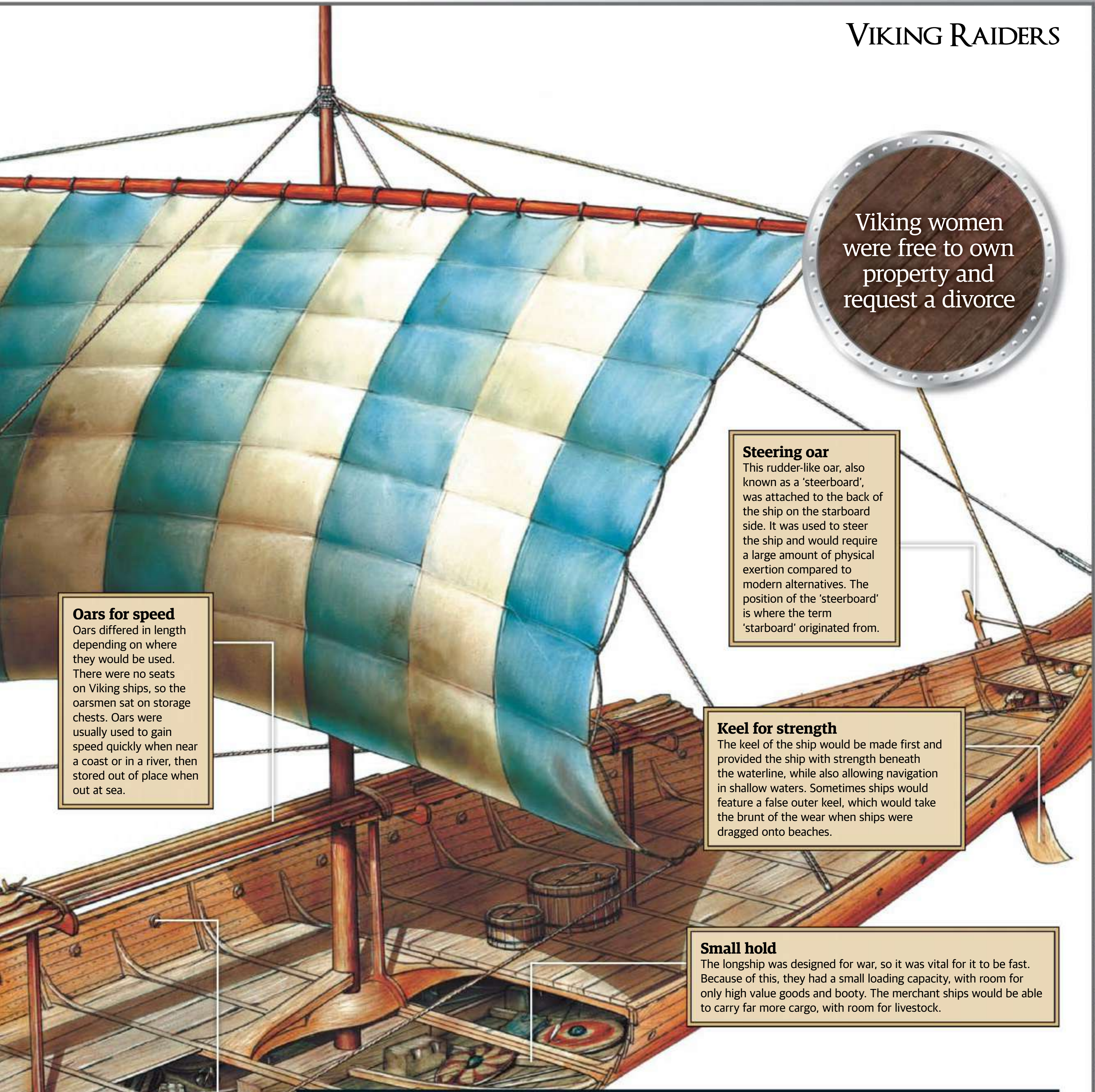
Some Vikings were buried in boats surrounded by weapons, valuable property and slaves



Woollen sail
Longships featured one large square sail approximately ten metres wide. These were most likely made from wool, though no sails have survived to confirm this. To keep the sail's shape when it got wet, the wool was covered with criss-crossing leather strips.

Wooden hull
All Viking ships were made in the same way, using planks of oak or pine overlapped and nailed together. The ships were then reinforced and made watertight by using tarred wool or other animal furs to fill in the gaps between the planks.

Frightening figurehead
The front of the ship was often decorated with a carving of an animal head, usually a mix between a dragon and a snake. These figureheads were removable and would only be put up when the ship was approaching land, as they risked heavy damage while out at sea.



Viking women were free to own property and request a divorce

Steering oar
This rudder-like oar, also known as a 'steerboard', was attached to the back of the ship on the starboard side. It was used to steer the ship and would require a large amount of physical exertion compared to modern alternatives. The position of the 'steerboard' is where the term 'starboard' originated from.

Oars for speed
Oars differed in length depending on where they would be used. There were no seats on Viking ships, so the oarsmen sat on storage chests. Oars were usually used to gain speed quickly when near a coast or in a river, then stored out of place when out at sea.

Keel for strength
The keel of the ship would be made first and provided the ship with strength beneath the waterline, while also allowing navigation in shallow waters. Sometimes ships would feature a false outer keel, which would take the brunt of the wear when ships were dragged onto beaches.

Small hold
The longship was designed for war, so it was vital for it to be fast. Because of this, they had a small loading capacity, with room for only high value goods and booty. The merchant ships would be able to carry far more cargo, with room for livestock.

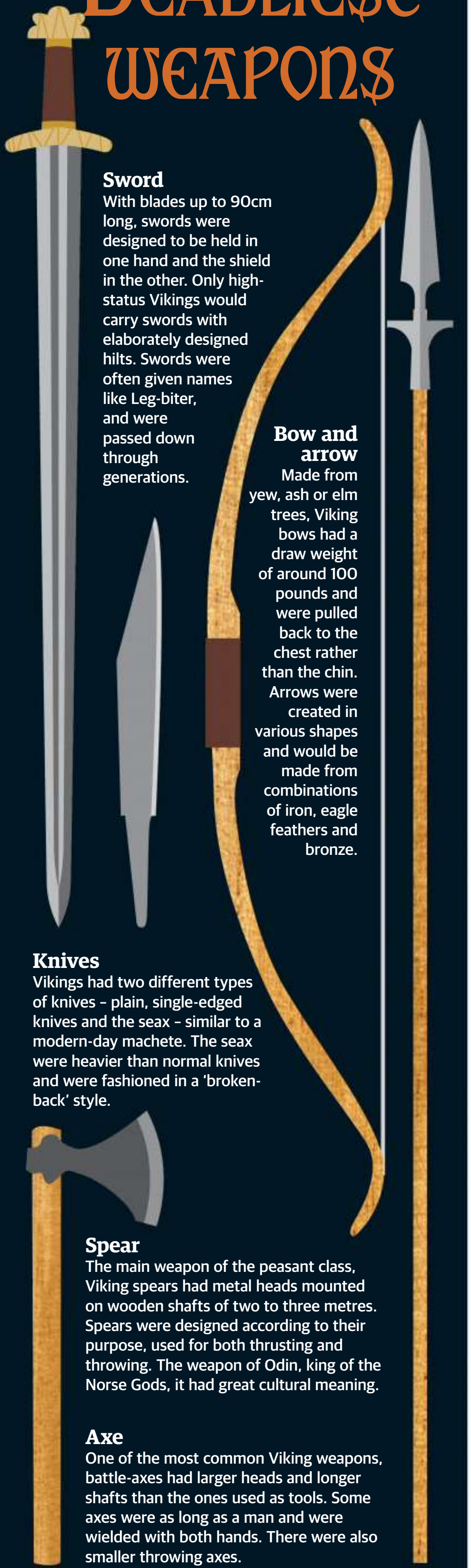
Oarports
These were holes for the oars that ran along the entire length of the ship on both sides. The holes would also be used to tie shields in place, but only when the ships were in port as the risk of losing their vital protection while the ship was in motion was too great.

Navigation

Before some of the greatest explorers in history were born, Vikings had already navigated their way around the world. But with no compasses, satellites or radios, how did this tribe of Scandinavians manage to map the globe so impressively? The answer is simpler than you might expect – experience. Rather than relying on devices, Viking travellers trusted nature to guide them. They would study the position of the stars and Sun, and even the colour of the sea and movement of the waves would give them indication of how close they were to land. Once a journey was complete, sailors would recount their voyage to others who wished to make the same journey. This ancient wisdom would be passed through generations.

The only tools Viking sailors needed were related to the Sun. For example, a sun-shadow board would be used at noon to check whether the ship was on course. A sun-stone could also be used on foggy days when the Sun was not visible. This stone would change colour to indicate the position of the Sun behind the clouds.

DEADLIEST WEAPONS



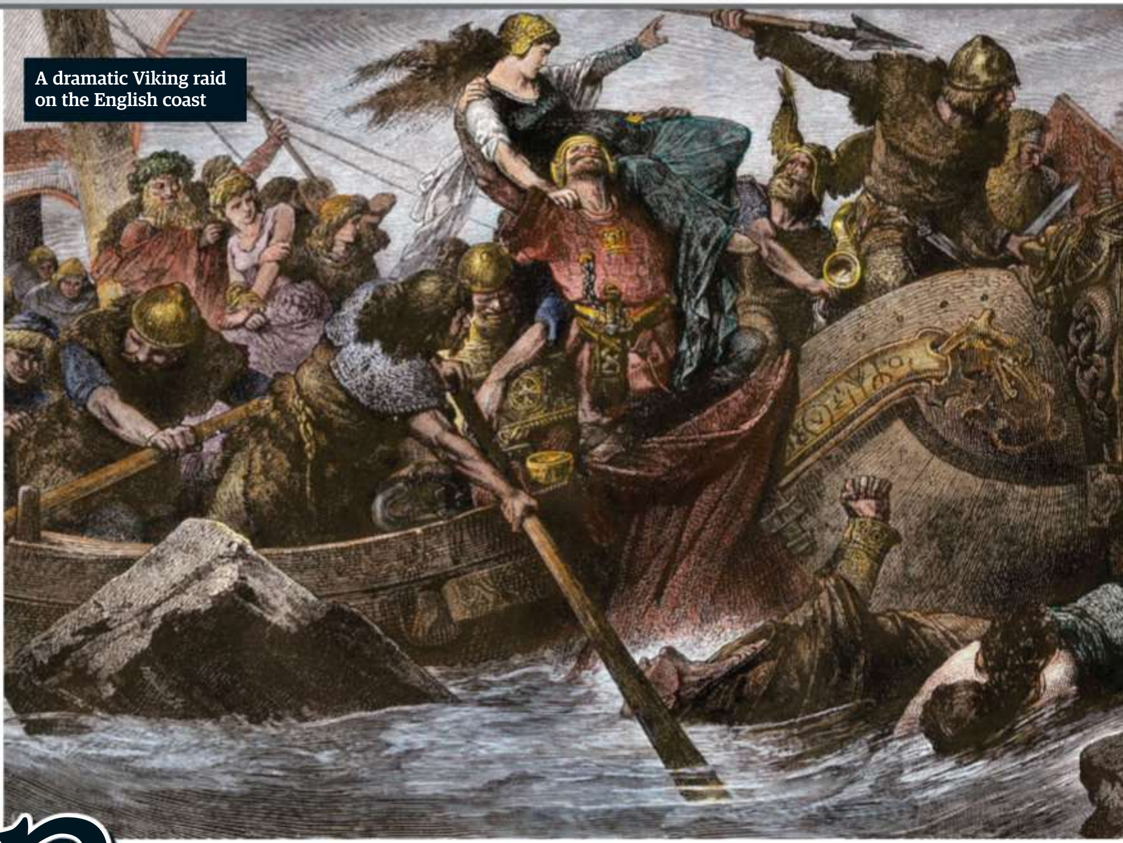
Sword
With blades up to 90cm long, swords were designed to be held in one hand and the shield in the other. Only high-status Vikings would carry swords with elaborately designed hilts. Swords were often given names like Leg-biter, and were passed down through generations.

Bow and arrow
Made from yew, ash or elm trees, Viking bows had a draw weight of around 100 pounds and were pulled back to the chest rather than the chin. Arrows were created in various shapes and would be made from combinations of iron, eagle feathers and bronze.

Knives
Vikings had two different types of knives – plain, single-edged knives and the seax – similar to a modern-day machete. The seax were heavier than normal knives and were fashioned in a 'broken-back' style.

Spear
The main weapon of the peasant class, Viking spears had metal heads mounted on wooden shafts of two to three metres. Spears were designed according to their purpose, used for both thrusting and throwing. The weapon of Odin, king of the Norse Gods, it had great cultural meaning.

Axe
One of the most common Viking weapons, battle-axes had larger heads and longer shafts than the ones used as tools. Some axes were as long as a man and were wielded with both hands. There were also smaller throwing axes.



A dramatic Viking raid on the English coast

RAIDS

No monastery was safe from the fiery scourge that swept over the land from beyond the sea

They had arrived in the dead of night; the darkness had been so thick that the monks had not seen their ship until it landed on the shore. It was too late, they all knew it, to call for help. A brother had run into the halls, waking the monks from their beds with shrill cries of "The demons are here! They're coming! They're coming!" Some of the brothers began to scream for help, while others leapt into action, grabbing precious items and concealing them in the folds of their cloaks. But already the doors were down and already the invaders were here. They were huge – bigger than any man the humble brethren had ever seen – with their wild blond hair and mighty weapons grasped in hand. They leapt upon the monks immediately, hacking at their bodies with a frenzied ferocity. Some pleaded for mercy, some did not have time to plead. There was no time for negotiations; how can one negotiate with pure, unbridled violence? There was only death, destruction and blood as they swung their axes and jabbed their swords. One brother alone had managed to escape the massacre. He speedily weaved through the figures and threw himself down into the tall grass outside. He watched as body after body was thrown from the doors of his home; he watched as men still alive were cast off the high cliff into the sea; and he watched as the heathens set the holy walls alight with flame. The hot wind lashed against his face and robes in the flickering darkness. He grasped a golden chalice in his hands numbly, the only thing he had been able to rescue before fleeing. The invaders had the rest of it, all the precious items loaded into sacks on their large ships. And almost as quickly as they had arrived, they slipped away from the shore and returned to the darkness.

In 793, a Viking crew sailing near northeast England raided a Christian monastery at Lindisfarne. For the Vikings the strange, exposed building packed full of valuable treasures was an opportunity too good to miss, but for many in England this shocking and unprovoked attack marked the beginning of the scourge of Viking raids. These sporadic but violent assaults continued across the coasts of England, and by 855 a force known as the Great Heathen Army had arrived in East Anglia. The army made their way across the country, capturing cities as they went, overrunning and overpowering the land. The Scandinavian warriors also launched invasions across the coasts of Ireland and all over mainland Europe. These raids even stretched to the Baltic Sea and Persia. The initial reasons for such rapid expansion are hotly contested between historians, with some believing the raids were a brutal response to the spread of Christianity, or that the Scandinavian population grew too large for their land or perhaps they were the actions of men simply drawn by the thrill of adventure. Whatever the reasons, the invasions left a lasting scar on those who lived to see them.

> Blond was a popular hair colour and Viking men would bleach their hair and beards

How the Vikings raided

1 Preparation

Vikings did not strike haphazardly; instead their raids were planned down to the finest detail. They would first identify a weak target to attack along the coasts which they knew perfectly. Because they had the fastest ships in the world they would launch their attack without any prior warning, ensuring that no help could reach their targets in time. Towards the mid-9th century these attacks had escalated to great fleets of three to four hundred ships.

2 Gather horses

Viking ships were designed to row up river, but if the target was some distance away they would leave their ships and travel by horse. With no horses on the ships, they would raid nearby villages for available mounts. These would be used to transport themselves and their booty across the land.

3 Surprise attack

The pious and humble monks did not stand a chance faced with their fierce opponents armed with superior weapons. The well-trained Vikings would launch a sudden furious, vicious attack on the monastery, slaying the holy men. Some would be stripped naked, and cast outside, some taken prisoner, and others thrown into the sea.

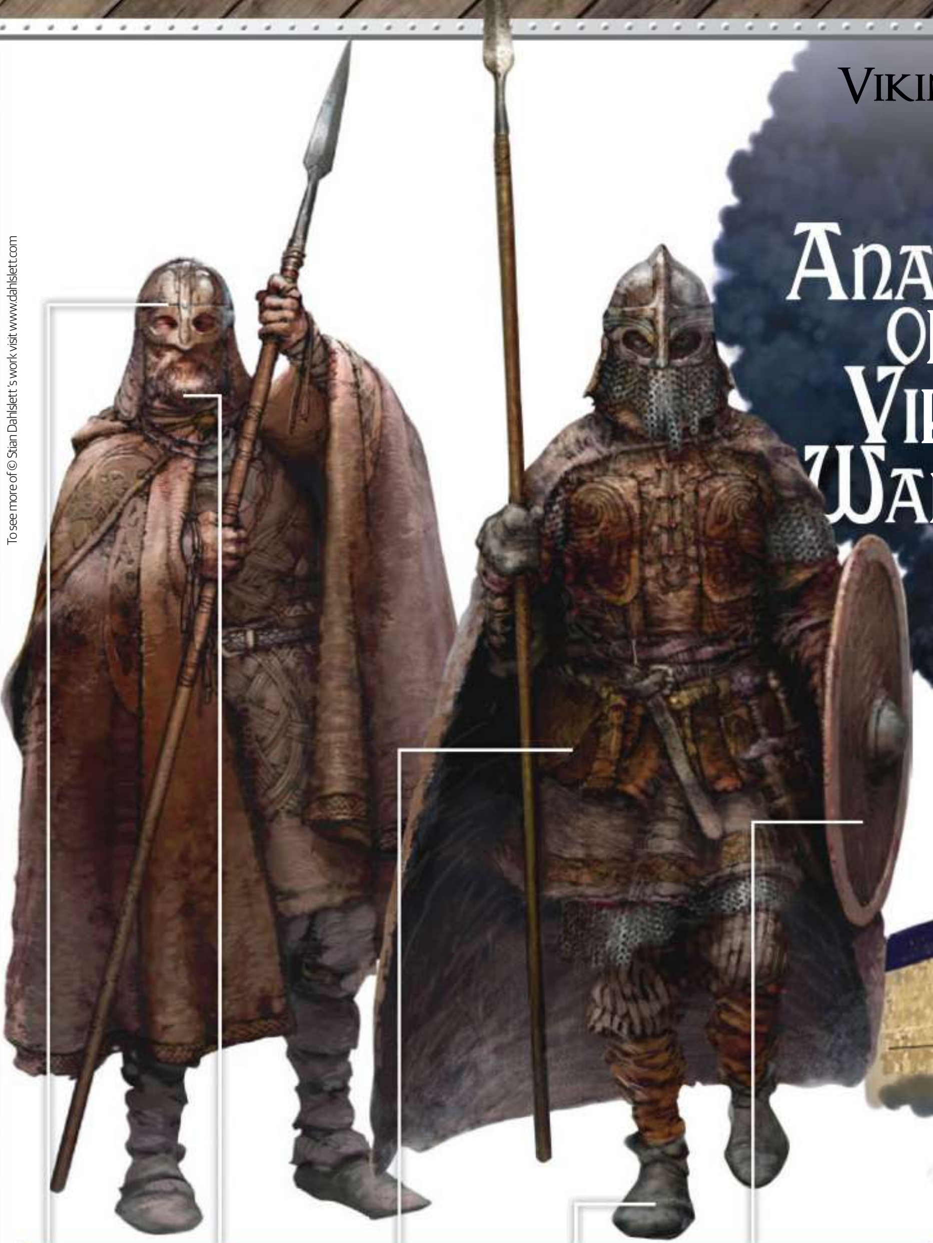
4 Loot and burn

Once the monks were dealt with, Vikings ravaged and pillaged everything they could. They plundered any valuables they could get their hands on, including storages of food, but especially precious relics. However, they often ignored the incredibly valuable bibles. Once they had looted the buildings they set fire to the monasteries and the villages surrounding them.

5 Escape

Laden down with their prisoners and booty, the Vikings would ride back to their ships, load them and sail away. They would later sell the gold, jewels and sacred emblems, and the monks would also fetch a high price in the European slave market.

ANATOMY OF A VIKING WARRIOR



To see more of © Stan Dahlslett's work visit www.dahlslett.com

Helmet
Vikings did not, in fact, have horned helmets. Instead, they were round with a guard around the eyes and nose. There is only one complete Viking helmet in existence – others may have been passed down through families then sold for scrap.

Hair
Long hair was favoured by both men and women. It would also be acceptable to shave one's hair or to wear it rolled in a tight bun near the nape of their neck. Men would also carefully groom their moustaches and beards.

Armour
Mail shirts or metal armour would have been very expensive for the average raider, as would leather, so these were reserved only for those of high status. Ordinary Vikings likely fought wearing their everyday clothes, made from wool.

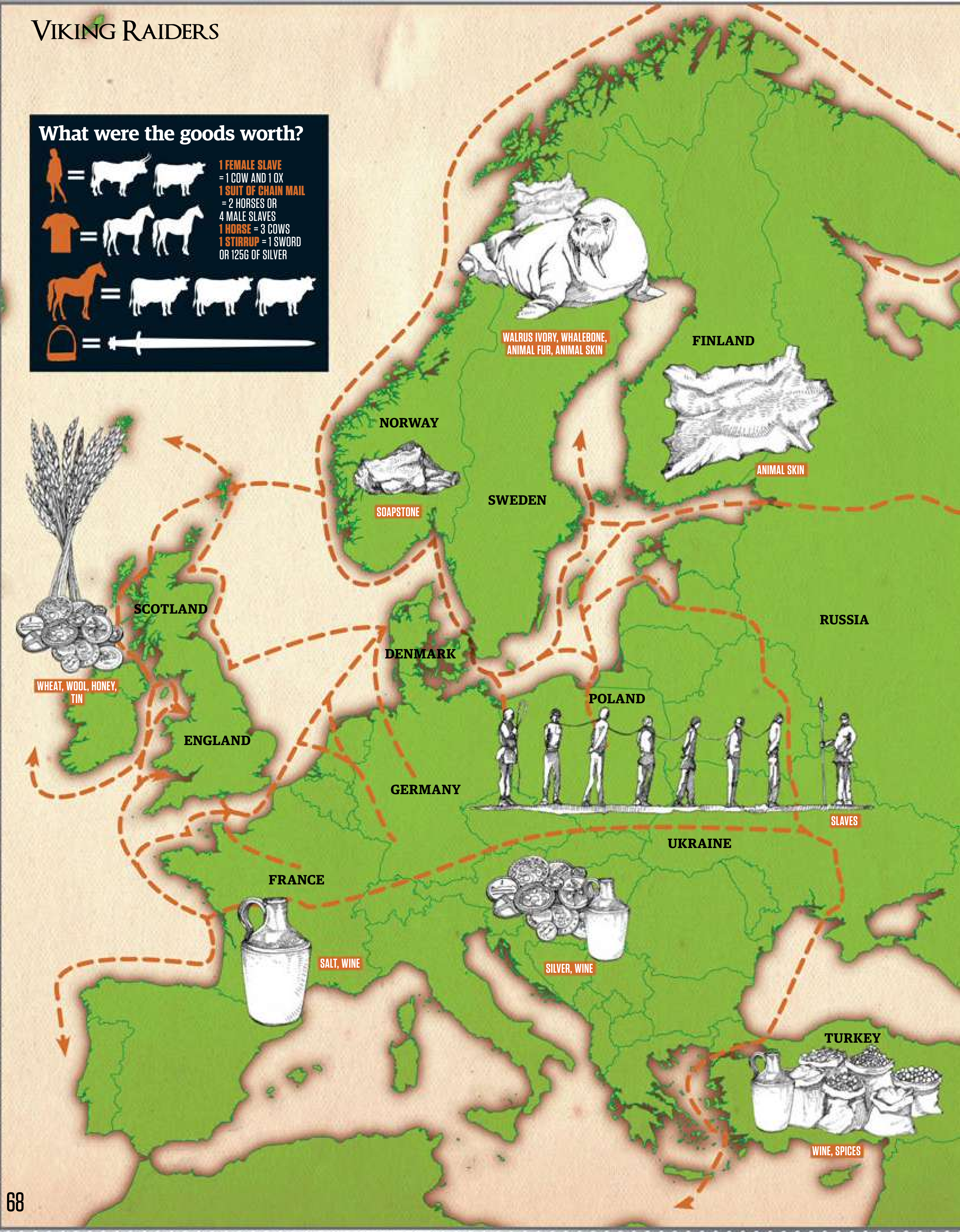
Shoes
Shoes were most often made from one long piece of leather sewn to the shape of the wearer's foot. Leather straps would be used to secure the boot to the foot, and thick woollen socks were worn to keep heat in.

Shield
Round shields were common and were made from light wood, such as fir or poplar and were reinforced with leather or iron around the edge. Round shields could get as large as 120cm in diameter, but most were around 75 to 90cm.

The attack on Lindisfarne

Lindisfarne priory remains a place of pilgrimage to this day

Lindisfarne is a holy island off the northeast coast of England, and during the Middle Ages was the base of Christian evangelising in the north of the country. However, in 793 a Viking raid on the monastery of Lindisfarne sent a wave of dismay to wash over Christians worldwide. On 7 June, Viking raiders invaded the monastery and "destroyed God's church on Lindisfarne, with plunder and slaughter." Although the attack was not the first in the country, it was unusual in that it attacked the heart of the Christian nation in the north. A contemporary scholar wrote of the attack, "Never before has such terror appeared in Britain as we have now suffered from a pagan race [...] The heathens poured out the blood of saints around the altar, and trampled on the bodies of saints in the temple of God, like dung in the streets."


NORWAY
SWEDEN
FINLAND
RUSSIA
SCOTLAND
DENMARK
POLAND
ENGLAND
GERMANY
UKRAINE
FRANCE
TURKEY
WALRUS IVORY, WHALEBONE, ANIMAL FUR, ANIMAL SKIN
ANIMAL SKIN
SOAPSTONE
WHEAT, WOOL, HONEY, TIN
SLAVES
SALT, WINE
SILVER, WINE
WINE, SPICES

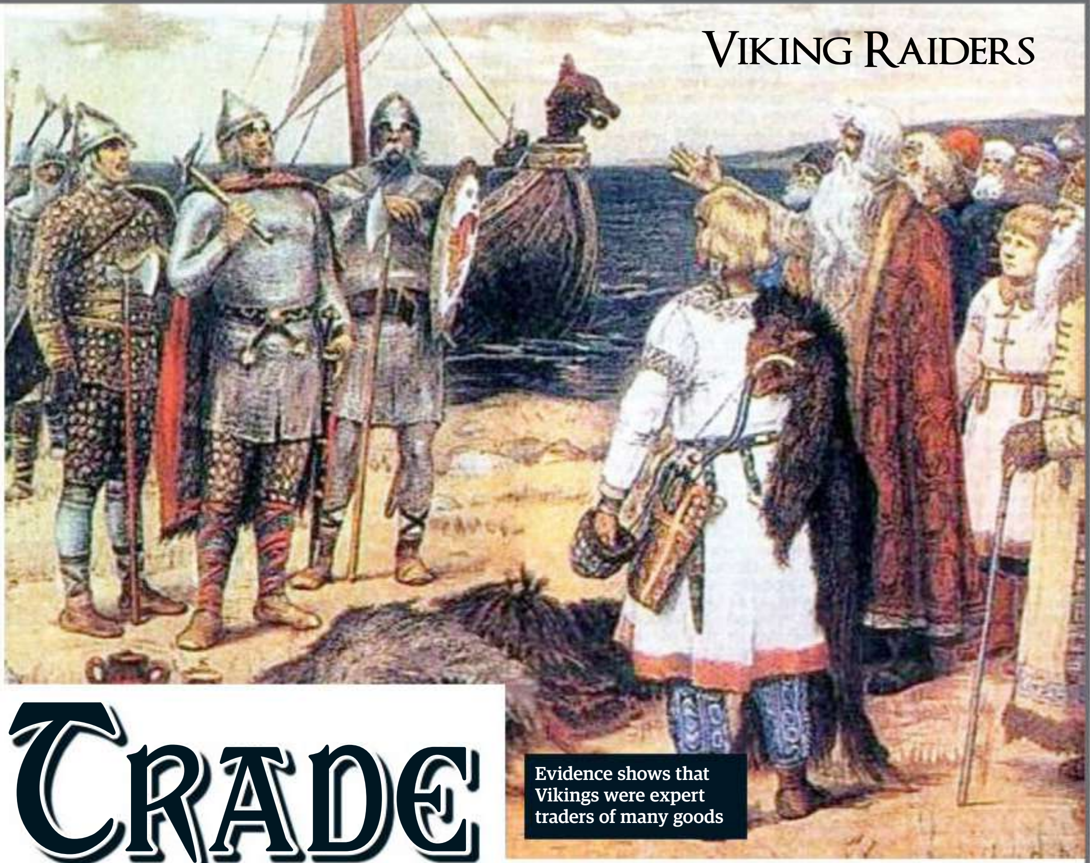
What were the goods worth?

1 FEMALE SLAVE = 1 COW AND 1 OX

1 SUIT OF CHAIN MAIL = 2 HORSES OR 4 MALE SLAVES

1 HORSE = 3 COWS

1 STIRRUP = 1 SWORD OR 125G OF SILVER



Evidence shows that Vikings were expert traders of many goods

TRADE

Vikings were not powered by brutality, but instead a complex and prosperous trade network

Although raiding and pillaging provided a quick intake of wealth, it was not a stable way to live or to build a civilisation. Instead, the Vikings dedicated far more of their time to building up a prosperous and powerful trading network. Because of their superior ship-building skills they were able to travel to trade in faraway lands, obtaining a host of exotic and valuable goods. Their specially designed trading ships were able to carry up to 35 tonnes of cargo, including silver and even livestock.

Trading markets began to emerge along the west Baltic Sea in the mid-8th century where people came from far and wide to trade an array of goods. As these markets flourished, traders decided to settle permanently along the routes and they transformed into trading towns. Birka in Sweden, Kaupang in Norway and Hedeby in Denmark all grew to be prosperous and bustling trading settlements, with the inhabitants all working as craftsmen and merchants. Prosperous trading routes also emerged along the British Isles, with York and Dublin developing into major trading centres.

As the trade boom increased the Vikings travelled further afield, across the Baltic Sea and along the Russian rivers. They founded more trading towns in Kiev and Novgorod. The Viking traders even went as far as Istanbul, the capital of the mighty Byzantine Empire across the Black Sea. This perilous journey was one only the Vikings dared attempt, through vicious rapids and battling hostile natives. The Vikings continued their trading journey inland, bringing their goods to Jerusalem and Baghdad. The lure of the Silk Road and the exotic riches of the East were too good to resist, and Vikings met with traders from the Far East in their trading centres in Russia, trading fur and slaves for silk and spices.

Silver coins were the most common form of payment, but this was unlike today's currency where different coins are worth a particular value. The coins were weighed in scales to determine their value; this is because a lot of coins were melted down and crafted into intricate and beautiful jewellery to trade on.

The great extent of the Viking trade network can be seen today in the hoards of silver coins, created in England, which have been found in Sweden, not to mention the 40,000 Arabic coins and the 38,000 German coins also uncovered there. Nordic bowls, Mediterranean silk and Baltic axe heads have even been discovered buried under English soil.

This vast and illustrious trade network attracted a wealth of eager and talented artists and craftsmen. Viking bead-makers would import glass from Western Europe to create an array of simple and decorative beads for the wealthy to adorn themselves with, while the ample supply of amber from the Baltic lands was fashioned into pendants and playing pieces. Skilled Viking craftsmen transformed their imported bronze to fine ornaments and mass-produced brooches, and deer antlers could even be used to make delicate and beautiful combs.

Viking wedding celebrations were huge occasions and could last for over a week

Raiders or traders?

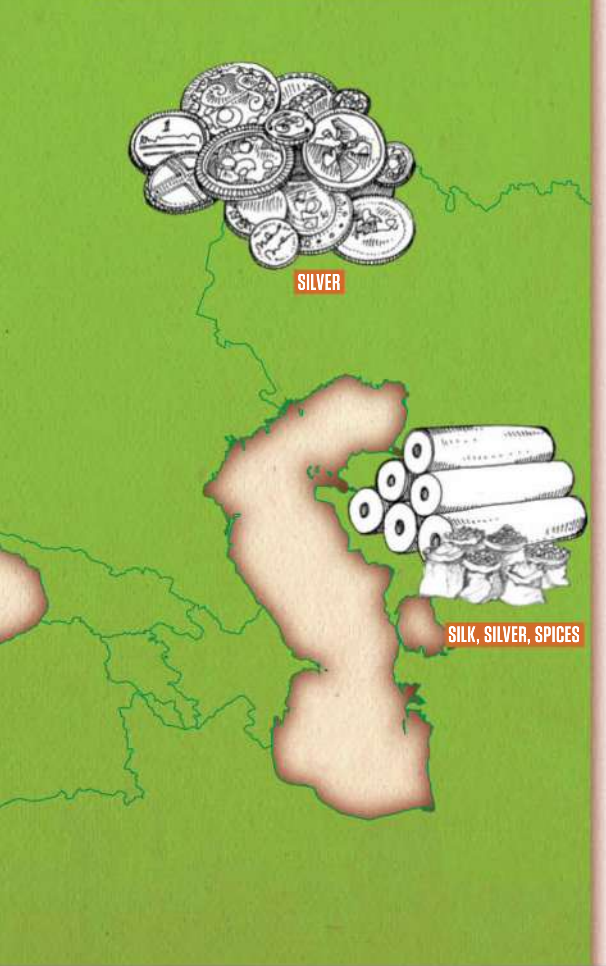
Stuart Perry, or Fastulf Geraltsson as he is known to the public, is the Jorvik Group's Interactive Team Leader. He manages a team of Viking interactives at Jorvik Viking Centre and archaeology and history interpreters across the group's five attractions

What was the motivation behind the Viking invasions? Were they simply bloodthirsty raiders, or did they have more civilised aims?

The motivation behind the Viking invasions was simple; farmland. The Vikings, or Norsemen – which is a more accurate name since a 'Viking' was a sea-borne raider that specialised in hit-and-run attacks – were searching for land.

Scandinavia is not rich in arable land – there is simply too much water and too many mountainous regions to support a population over a certain size. The Vikings had been raiding the coast of England since 793 – the famous attack on Lindisfarne – and would have had plenty of opportunity to see the abundance of good farmland, healthy crops and fat cattle all over the country. Combine this with the riches presented in the monasteries and towns they were so fond of raiding and England became a perfect area for expansion.

As for being 'bloodthirsty raiders', there is that element to the culture, yes, but it was not simply for violence that the Vikings went raiding. It was for profit. Rarely would the Vikings destroy an entire settlement, and the reason is simple; they wanted to come back and do it again! Raiding was a job for young impetuous men – but it was not the main focus of life in early medieval Scandinavia. It is this message that we convey at every opportunity here at Jorvik Viking Centre.



© Sol 90 Images; Abigail Daker; Alamy

COME MARVEL AT THESE 10 SUPERSTARS YOU NEVER KNEW EXISTED

Written by Mark Juddery

Once household names, these celebrities of the past are now mostly forgotten. Nonetheless, they certainly left their mark...

In these days of social media, it can take only moments to hit the spotlight. It takes slightly longer to become a superstar.

Of course, the fame game was slower in the past. The sports heroes and entertainers of the Elizabethan or Victorian eras could not be witnessed in action by millions of television viewers. Ancient Greeks and Romans didn't have the popular press to tell of their exploits. Yet many stars did become famous. There has always been a way to spread the word.

Some superstars are remembered fondly after their deaths. Others, like Shakespeare and Bach, enjoy success during their lives, but become true superstars later, when their true greatness is reassessed. The ten stars here have not had the staying power of Shakespeare, but are historically significant nonetheless. Whoever thought an athletic event could become so popular after one man, blessed with plenty of energy, lost a bet? Or that the recording industry would change forever when an Australian diva noticed her name being used to sell perfume? Or that the Hollywood star system would begin after an actress agreed to die (sort of)? In the world of superstars, truth is often stranger than fiction.

10

ANCIENT GREECE'S GREATEST OLYMPIAN

MILO OF CROTON 6TH CENTURY BCE

Profession: Champion wrestler
Modern-day counterpart: Mike Tyson

The ancient Olympians - a round-up of the region's greatest male athletes (women were eventually given the Hera Games) - became celebrities in their own right. Like today's sports fans, arguing vehemently about the greatest modern Olympians, scholars have had lengthy debates as to who was the greatest star of the Greek games. The most popular event - the finale of each Games - was wrestling in its various forms. Milo of Croton proved almost unbeatable in upright wrestling. Milo's record was incredible: the champion of six Olympic, seven Pythian, nine Nemean and ten Isthmian Games, a period of gruelling competition covering some 24 years between 540 and 516 BCE. According to one historian, Milo followed his sporting years with a brief but outstanding military career.

According to legend, Milo of Croton fended off lion attacks in his spare time

Florence Lawrence was one of many Canadian pioneers of the movie industry

09

AMERICA'S FIRST LADY OF THE MOVIES

FLORENCE LAWRENCE 1890-1938

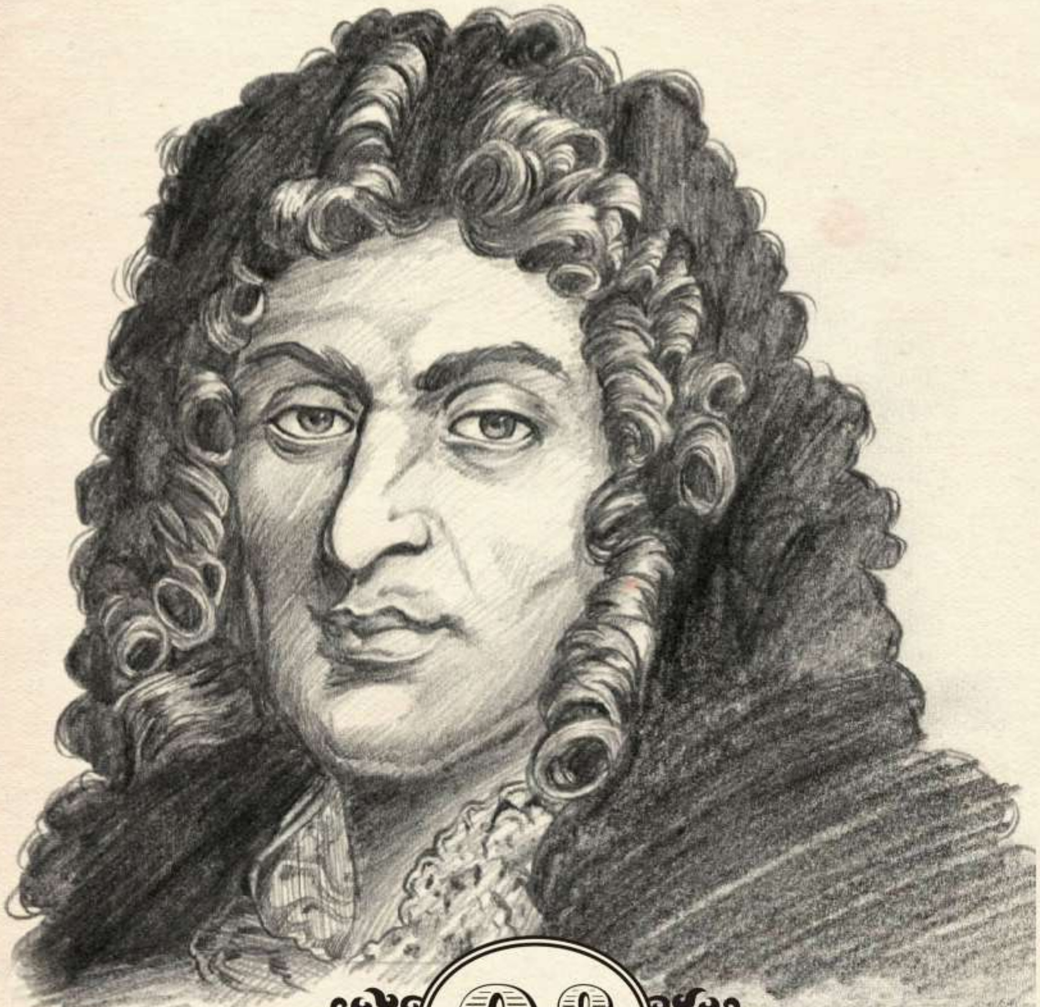
Profession: Actress, screen idol
Modern-day counterpart: Lindsay Lohan

In the early years of American movies, actors' names were not revealed, lest they become too egotistical and demanding. Stars of the theatre were bad enough, but in this new medium - where actors were seen around the world, larger than life, to millions of people - they could be even more difficult to handle. It might have been true, but the system was never going to last.

In 1910, maverick producer Carl Laemmle turned a popular movie face into a household name. "The Biograph Girl", so-called after the studio owned by Thomas Edison, was a pretty 22-year-old whose face already lured millions to the 'flickers', as she churned out 100 short films every year. To guarantee her face made the news, however, Laemmle didn't just reveal her name; he killed her as well. In March, he sent out a press report that the mysterious Biograph Girl had died in a tragic streetcar accident.

It was one of the industry's first publicity stunts. This was followed quickly by an announcement that the report of her 'death' was a lie. She was still alive - and she was no longer the Biograph Girl, as she was now working for Laemmle's new studio. Her name was Florence Lawrence. However, the fact that this all-American girl was actually Canadian, or that her real name was the rather less poetic Florence Annie Bridgwood, was not revealed. A week later, the lady herself appeared in person, greeting huge crowds. Lawrence was mobbed by starstruck fans, who tore at her clothes in the United States' first public display of movie-star adulation. Armed with his own mini-empire, based on the new star system, Laemmle moved operations to California, started Universal Studios, and became one of the founders of Hollywood.

Sadly, Lawrence was also one of the first movie stars to discover the fickle nature of stardom. Her career ended after she was injured in a studio fire in 1915. She tried to make a comeback a few years later, but the public was no longer interested. Losing her fortune in the 1929 Wall Street Crash, still in chronic pain from her back injury, and forgotten by most of the world, she committed suicide in 1938, aged 52.



08

THE TRIPLE THREAT: GENIUS COMPOSER, MUSICAL VIRTUOSO… AND BALLET DANCER

JEAN-BAPTISTE LULLY 1632-1687

Profession: Official composer at the French royal court

Modern-day counterpart: Andrew Lloyd-Webber

For centuries, western music was mainly used by the Catholic Church for devotional and spiritual compositions. Though wandering minstrels would entertain villagers with lighter fare, musicians and composers would not become superstars.

In the 17th century, as the Church's authority weakened, composers became free to write not just sacred music, but also music for the new breed of virtuoso musicians – the violinists, lutenists, harpsichordists and opera singers who became the first musical stars. Even the greatest instrument-makers, such as Stradivari and Ruckers, became celebrities. And the composers? The best – or most fashionable – ones even had groupies, who would swoon at them in the grand concert halls!

More than a century before Mozart and Beethoven dominated the music scene, Giovanni Battista Lulli, a miller's son from Italy, was first discovered as a 12-year-old violin virtuoso, and taken to the French royal court. His flair for the violin, however, proved to be just the tip of his talent iceberg. He studied composition, learnt the harpsichord and guitar, and even learnt to dance, writing ballets for the court. He danced the *Ballet Royal De La Nuit* with the young monarch, Louis XIV, whom he would serve devotedly. His reward: in an age of extravagance, Louis gave him access to dozens of musicians, eventually resulting in the first orchestras.

Lully became a French citizen in 1661, even 'translating' his name into French. The versatile composer went on to cofound the Paris Opera, composing more than 20 operas. He collaborated with librettists like the great French playwright Moliére, with whom he invented the 'comédie-ballet', a new form of theatre that incorporated comedy, ballet and incidental music.

Just as music was Lully's life, it eventually proved to be his death, as he dropped a large baton on his foot during a performance. Gangrene set in and he died a few weeks later.

07

THE ORIGINAL METHOD MAN

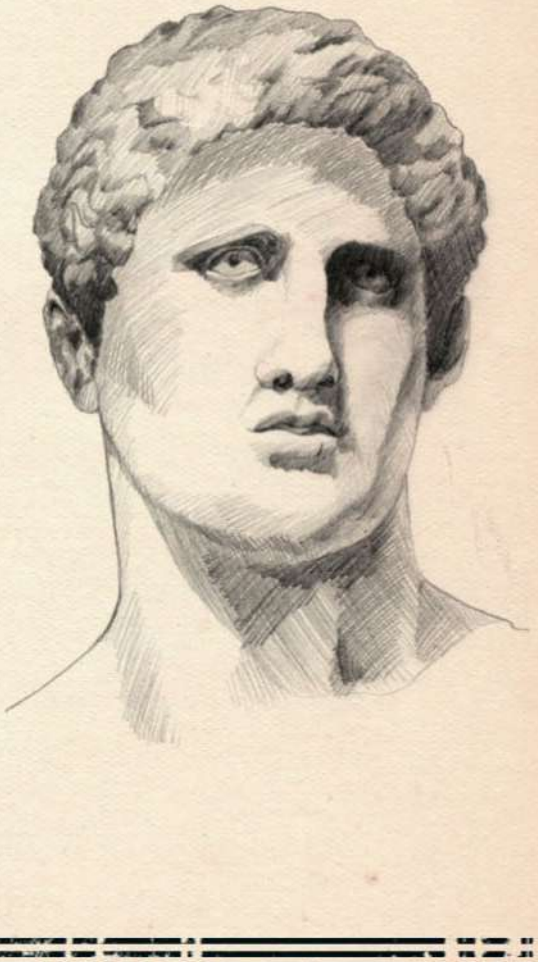
POLUS 4TH CENTURY BCE

Profession: Tragedian

Modern-day counterpart: Daniel Day-Lewis

While the Greeks famously invented theatre, most actors did not win any celebrity status until the fourth century BCE – and one of the most popular was Polus. Little is known about any of these actors today, but enough has been written about Polus to make him seem like an intriguing character. Some 2,300 years before "the Method" was invented, he was perhaps the first method actor, using techniques that would put Brando or Newman to shame. In the title role of Sophocles' *Elektra*, he wanted to bring on the emotion when Elektra received the urn with her brother's ashes. Even in Greek theatre, male actors would play female roles – a tradition that would continue until after Shakespeare's time. Polus is said to have borrowed from the tomb the ashes of his own son, who had recently died. With these ashes, tears must have flowed freely.

It is a legendary tale, and – if indeed it is true – one of the few anecdotes known about any actor of the Ancient Greek stage.



The 1960s' civil rights movement ended the prominence of blackface performance in Hollywood

06

ALL-SINGING, ALL-TALKING, ALL-FILMING SUPERSTAR

AL JOLSON 1886-1950

Profession: Singer, entertainer, all-around show-off

Modern-day counterpart: Lady Gaga

At his peak, Al Jolson was known as "the world's greatest entertainer", with his manic energy and powerful singing voice. Since then, he has fallen from favour – partly because more than 100 years have passed, and partly because blackface performers (Jolson was a Russian-born Jew, who "blacked up" to sing songs like *Swanee* and *Blue Skies*) are now considered a shameful aspect of old-time show business.

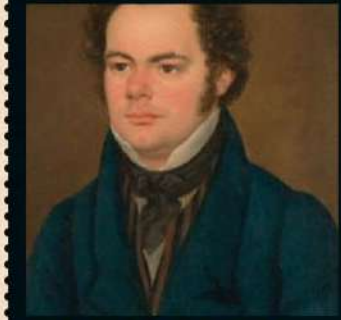
Audiences of 1911, however, did not consider him offensive or insulting. That year, during a performance of *Paris Is A Paradise For Coons* (a play despised by critics, even in those non-PC times), he suddenly decided he agreed with the scathing reviews. He stopped the action in mid-act, stepping out to the front of the stage. "I'll tell you how the story comes out", he told the audience. "The fella gets the girl. Now shall we go on with it, or do you want to hear me sing?" The crowd roared with applause and Jolson took over with some of his favourite songs, leaving the rest of the cast fuming.

By 1927, despite his obvious star quality, he was a 41-year-old has-been. However, his career was revived when he made his Hollywood debut in *The Jazz Singer*, known as the first talking picture. In truth, it was a silent film broken up with a few musical numbers. Jolson's dialogue consisted of a mere 281 words, all ad-libbed into a microphone with the same rebellious self-confidence he had shown in his stage shows. With their primitive editing facilities, the filmmakers couldn't really stop him. His most famous line – "You ain't seen nothing yet" – summed up the excitement and potential of the 'talkies' or 'talkers', as talking films would soon be called. *The Jazz Singer* was a major hit, leading all Hollywood studios to quickly equip themselves for sound.

He followed with an even bigger hit, *The Singing Fool* (1928). Movie studios were now looking to the theatre for their new stars, as strong voices suddenly became as important as photogenic faces. But Jolson's own Hollywood career, despite its initial triumph, would prove to be short-lived.

CELEBS WHO NEVER KNEW FAME

Revered today, they were 'nobodies' in their own lifetime



FRANZ SCHUBERT

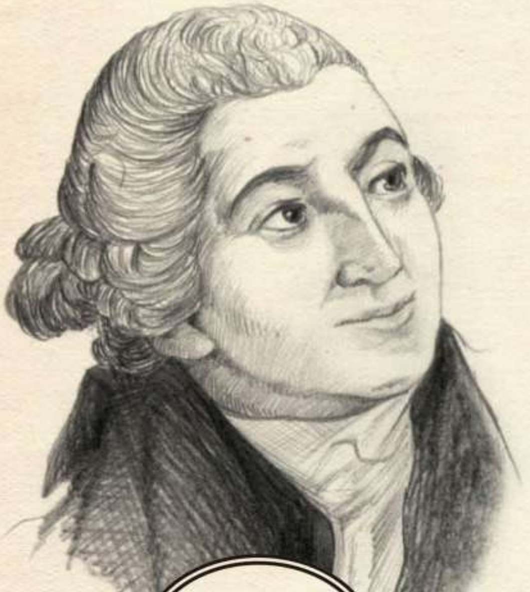
This Austrian composer was amazingly prolific, churning out piano and ensemble pieces, operas, symphonies and over 600 songs. He died at 31, and his music remained mostly unknown for another ten years. It was finally discovered by his fellow composers Schumann and Liszt, in a polished chest where Schubert's manuscripts were kept safe by his brother, Ferdinand.

EMILY DICKINSON

One of the United States' best-loved bards today, as well as probably its most painfully shy in life. Only a measly seven of her poems were published during her lifetime, but she kept hundreds of others in boxes and drawers all around her home. These were not discovered until after her death, and the first collection of her poetry was published four years later, in 1890.

LEON BEIDERBECKE

This Idaho-born musician joined popular bandleader Paul Whiteman, who often featured Beiderbecke's innovative cornet solos. Alcoholism and stress ended Beiderbecke's career, and pneumonia ended his life, at 28, in 1931. Seven years later, a novel based on his life brought his name to the fore, and recordings were dusted off. He was reassessed as the first great jazz innovator among white musicians.



05

THE MAN WHO BROUGHT RESPECT TO SHAKESPEARE

DAVID GARRICK 1717-1779

Profession: **Actor, theatre manager, producer**
Modern-day counterpart: **Ben Affleck**

Long before the days of movies or television, David Garrick was so famous as a stage actor that the term "Garrick fever" was coined - not just about him, but about an illness that happened to be spreading through Dublin at the same time. A dubious honour, especially for an actor and producer who changed the way Shakespeare was performed, bringing more reverence to the Bard and the performers, and putting an end to the heckling and lewd audience behaviour that had characterised early performances.

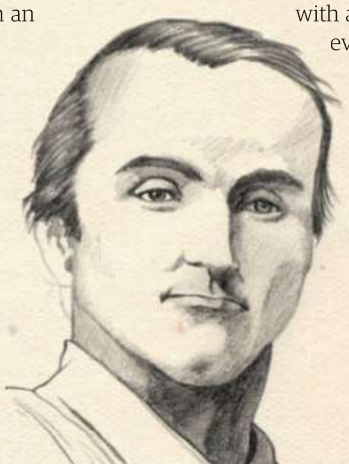
Garrick was an accidental superstar. Planning a career in law, he had worked as a winemaker in London. In his spare time, he wrote plays for the local theatre. In 1741, he made his acting debut when another cast member pulled out. Later that year, he played Shakespeare's Richard III, becoming the talk of the town. Perhaps because of his untrained acting background, he eschewed the grand gestures and melodrama with which Shakespeare had previously been performed. Instead, he had a realistic and believable approach that old-style actor James Quin described as "alive in every muscle and every feature." Stage acting was changed forever. "If the young fellow is right", said Quin, "I and the rest of the players have all been wrong." In 1831, some years after Garrick's death, the exclusive Garrick Club was founded in London. For centuries, the acting profession had been scorned by "polite" society, but Garrick had left it with a new respect.

04

AMERICA'S FAVOURITE ENDURANCE ATHLETE

EDWARD PAYSON WESTON 1839-1929

Profession: **Long-distance walker**
Modern-day counterpart: **Tom Daley**



Today, race-walking might be one of the most ridiculed athletic events. Edward Payson Weston, however, turned it from an obscure novelty to one of the coolest sports of 1861 - and he wasn't even competing against anyone in doing it!

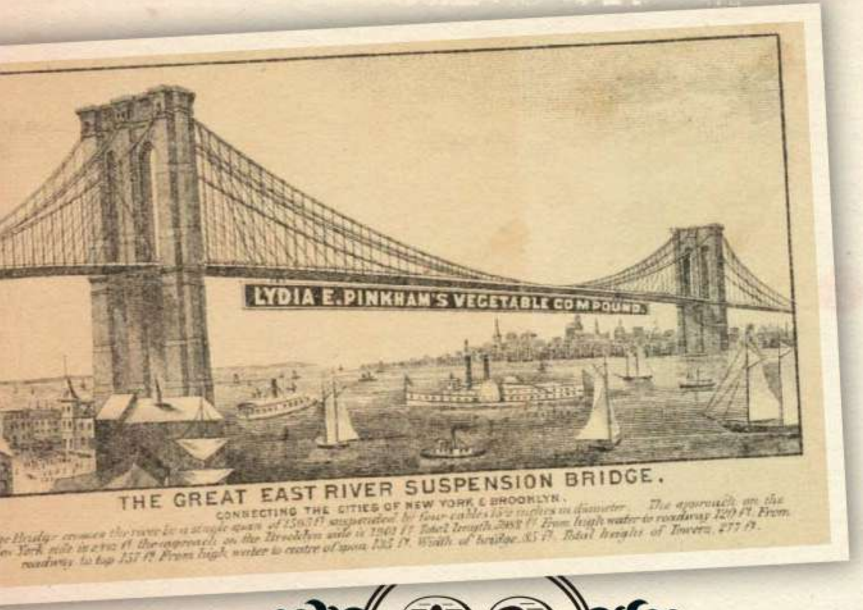
Originally, Weston did it simply because he had lost a bet with a friend of his, agreeing to walk a distance of 769 kilometres (478 miles) from Boston to Washington, DC, when he predicted that Abraham Lincoln would lose the upcoming US presidential elections. After Lincoln's landslide victory, Weston took only ten days, despite facing deep snow and mud enroute, arriving in time to meet the new president in person at his inaugural ball.

His walk was not done quietly, but accompanied by a barrage of promotion. At a time when such endurance feats were even more unusual than today, generally greeted with astonishment, he was cheered at every town, kissed by the women, surviving on food handouts from generous people on the way.

His achievement popularised multi-day walking races, which he would often enter. However, he preferred solo, open-country walks, with a generous wager to make it worth his while.

He continued these walks for many years, sometimes retracing his steps as he became older - and bettering his previous times. In 1913, at age 74, he hiked 2,488 kilometres (1,546 miles) from New York to Minneapolis, completing the journey in 51 days!

Edward Payson Weston (second from right) in 1915, during a reception after one of his famous walks


LYDIA E. PINKHAM'S VEGETABLE COMPOUND.
THE GREAT EAST RIVER SUSPENSION BRIDGE.
CONNECTING THE CITIES OF NEW YORK & BROOKLYN.

03

THE FACE THAT SOLD A MILLION (OR MORE) VEGETABLE COMPOUNDS

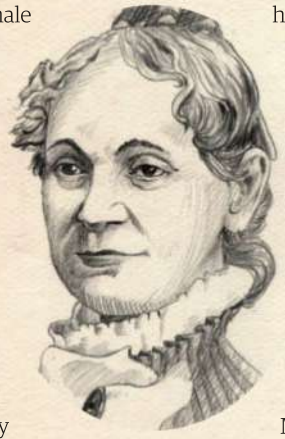
LYDIA E PINKHAM 1819-1883

Profession: Ex-schoolteacher, home remedy-maker, 'saviour of the human race' (according to the song, at least)

Modern-day counterpart:

Paul Newman

Pinkham was perhaps the most famous American woman of her time – or at least, in her old age and in the years after her passing. Her wise, caring, grandmotherly face was on every bottle of Lydia Pinkham's Vegetable Compound, which offered to cure almost everything, especially so-called 'female weaknesses.' "Health of women is the hope of the race", suggested the newspaper ads. She was a face you could trust. When her image was removed from the bottles in the 1890s, sales tumbled; when it was returned the next decade, annual sales increased by nearly 2,500 per cent.



Pinkham, as a young schoolteacher, had first brewed the product – a concoction of unicorn root, fenugreek seed, black cohosh and a small amount of alcohol to prevent freezing – in 1843. It was not until decades later, promoted aggressively by her son Daniel, that it became an essential addition to medicine shelves across the United States. Lydia's image, the drawing printed on each label, was not copyrighted, ensuring that she was eventually recognised across the Atlantic as well. Despite the contributions of Daniel, as well as her other children, it is thought that with her expertise and way with words, Lydia herself wrote most of the advertising material.

Customers were invited to write to Mrs Pinkham, who would personally answer their health questions – a practice that she would continue for years after her death. By then, her daughter-in-law Jennie had taken over, replying to letters as the new "Mrs Pinkham."

Countless companies have followed in Lydia's footsteps, either turning their founders into the face of the product or, where the founders didn't prove as 'natural' as Mrs Pinkham, fictitious characters such as Ronald McDonald. The lady herself, however, is perhaps best remembered for an unofficial advertising jingle, *The Lydia Pinkham Song*. This changed its lyrics and became *Lily The Pink*, a hit 1968 song by the British band the Scaffold, extolling the benefits of a miraculous "medicinal compound."

02

THE MOST DARING PERFORMER IN HISTORY? MAYBE SO!

CHARLES BLONDIN

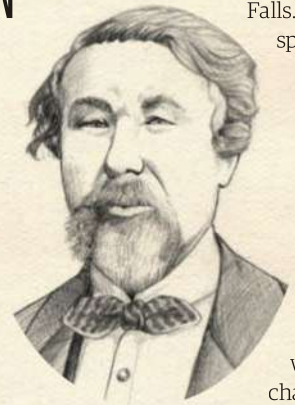
1824-1897

Profession:

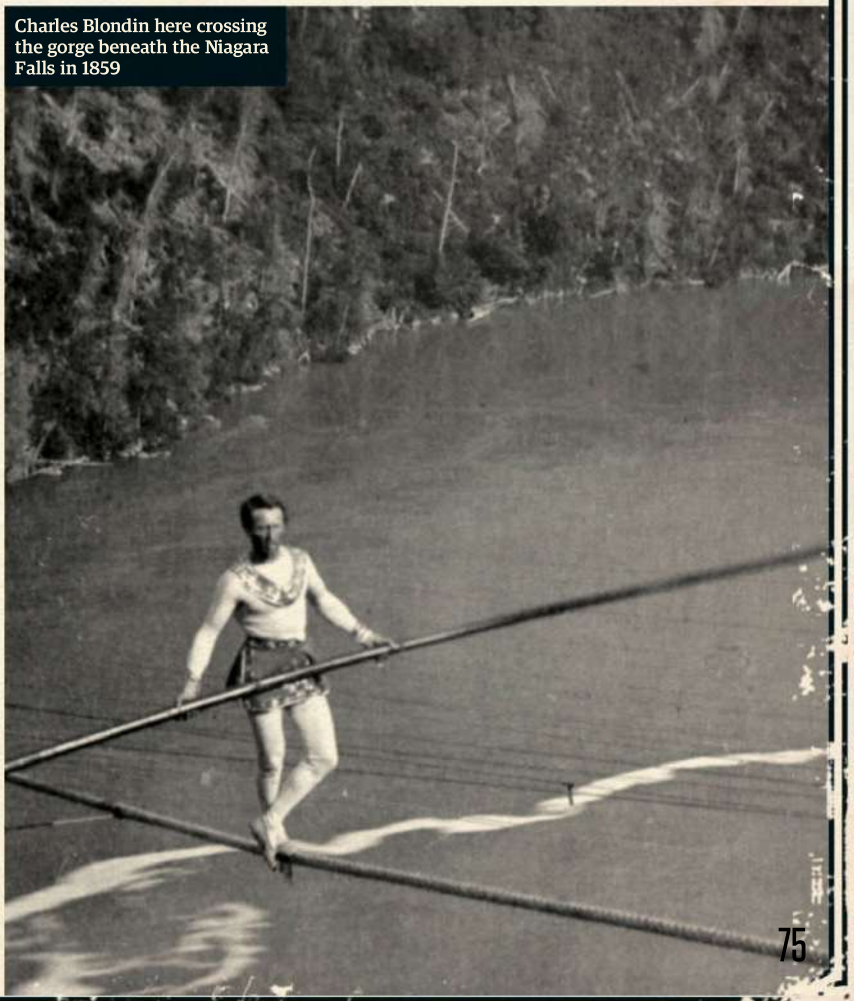
Tightrope walker, daredevil

Modern-day counterpart:

David Blaine



With a combination of great skill and utter fearlessness, French tightrope walker Charles Blondin (born Jean-Francois Gravelet) became one of the most nerve-racking showmen of his time or any other. Bored with the usual feats of his circus troupe, he left them during an 1859 tour of North America, announcing he would walk across a rope stretched 82 metres (270 feet) above Niagara Falls. Watched by 25,000 spectators, he not only strolled across the rope, but also did a back somersault, brought on a heavy camera and tripod to take photos, and walked backward across it. He would later vary his act in even more terrifying ways: standing on a chair, walking blindfolded, wrapped in a sack, stilt-walking, cooking omelettes on a portable stove, and pushing a brave volunteer in a wheelbarrow. Despite such derring-do, he was able to safely retire to peaceful old age, remembered as "the hero of Niagara."



Charles Blondin here crossing the gorge beneath the Niagara Falls in 1859

01

THE FIRST MODERN POP MUSIC STAR… IN 1904!

DAME NELLIE MELBA 1861-1931

Profession: **Prima donna singer**
Modern-day counterpart: **Beyoncé**

The great singers of the 19th century, able to fill concert halls in their time, are mostly forgotten today. In many cases, this is because they were never recorded – or, if their careers continued into the very early days of gramophones, the primitive sound quality couldn't do justice to their remarkable voices.

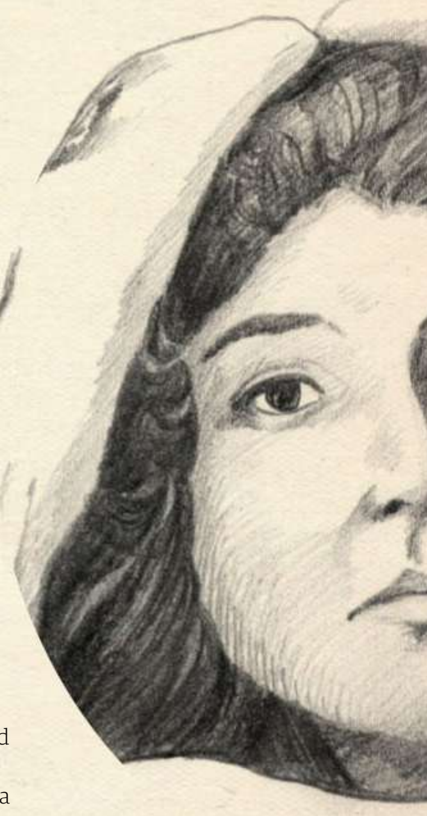
Operatic soprano Dame Nellie Melba is still well known in her native Australia, where she is considered a national hero, honoured with her face on the Australian 100-dollar note. However, she was one of the most world's popular singers of her time, the toast of Covent Garden, the New York Metropolitan Opera and many other prestigious venues. But her talents did not end with her voice. Her business skills could provide a lesson for today's divas – and they possibly do. "You must not only sing; you must not only act", she said, "you must also be stage manager, press agent, artistic advisor." Media-savvy, she lured newspapers with publicity stunts and controversial quotes, some of which she would later deny, but not until they had already been circulated and brought her firmly into the spotlight. In full control of her career, she was the first artist to perform on British radio, in the music broadcast in 1920.

She always kept one eye on financial matters. When celebrity chef August Escoffier dedicated to her a dessert called Peche Melba, which became a popular dish, she did not bow to this flattery. The way she saw it, he owed her millions of dollars in unpaid royalties. In New York, when she found her name was being used to sell perfume, she responded by copyrighting her name around the entire United States – although, unlike many superstars of today, she stopped just short of producing her own perfume.

Her business genius, however, did extend to merchandise. She was one of the first to see the potential of sound recordings to sell music. Whatever the limits of their quality, they could allow people to enjoy her concerts without leaving home. By 1904 she had branded herself and her published material with a special mauve label. Records with this label cost 21 shillings – a shilling more than the ordinary mortals next to her on the record shelves. The message was simple: Melba was a byword for quality.

Her rivals followed her lead; Italian diva Adelina Patti had her own pink label, sold by music shops that proudly advertised "Patti is singing here today." However, few in those early days could come close to matching Melba as a recording star – even though she was already 45 years old when she had her first hit record.

Naturally, image was vitally important as well. Even as she approached old age, she worked hard to keep looking good. This was where she went too far; she died of complications caused by a disastrous facelift.



> "MEDIA SAVVY, SHE LURED NEWSPAPERS WITH PUBLICITY STUNTS"

THEN & NOW

WEALTH

Now: Jennifer Lawrence, the number one Hollywood box-office star of 2013, made $34 million that year. But even with that staggering number, it was nothing compared to Tom Cruise.

Then: Clara Bow, the number one Hollywood box-office star of 1927, was on a salary of $2,800 a week – the equivalent of $36,208 a week today, or less than $2 million a year. Chicken feed! But then again, she didn't need to speak.

FASHION

Now: Promoting the latest fashions has become such a major role that a new type of celebrity was devised: the supermodel, starting in the early-20th century, with pin-up girls like the ubiquitous Evelyn Nesbit.

Then: Although David Garrick made acting a more high-minded profession, stars of the 18th and 19th centuries would dress flamboyantly. It kept the public entertained in magazines and street gossip.

MUSIC

Now: Record and compact-disc players have been replaced mainly by digital formats. Indeed, with so much software and instruments available, making it easier to record, more people are making their own music.

Then: Without gramophones or radios, a piano was as much a fixture of many Victorian homes as those devices would later become. The first song that broke the barrier for selling a million copies was *After The Ball* in 1893 – and that was the sheet music version.

AWARDS

Now: Awards ceremonies are a major part of the entertainment world, whether in cinema, where the Oscars were first handed out in 1929, theatre, as the Tony Awards date back to 1947, or music, as the Grammy Awards from 1958.

Then: As most entertainment wasn't mass-produced, awards were not a fixture of the past. Even literary prizes were rare. Charles Dickens never won anything, for example. In 1895, however, Henry Irving became the first actor to win perhaps the greatest prize: a knighthood.

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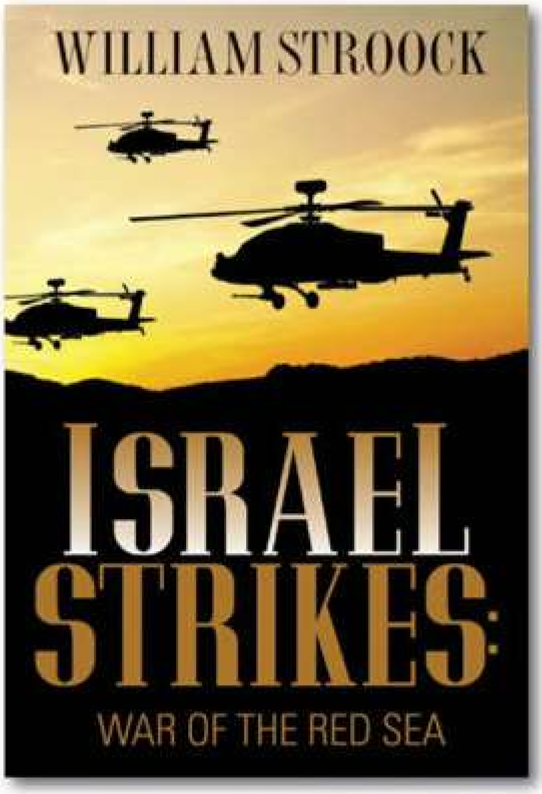

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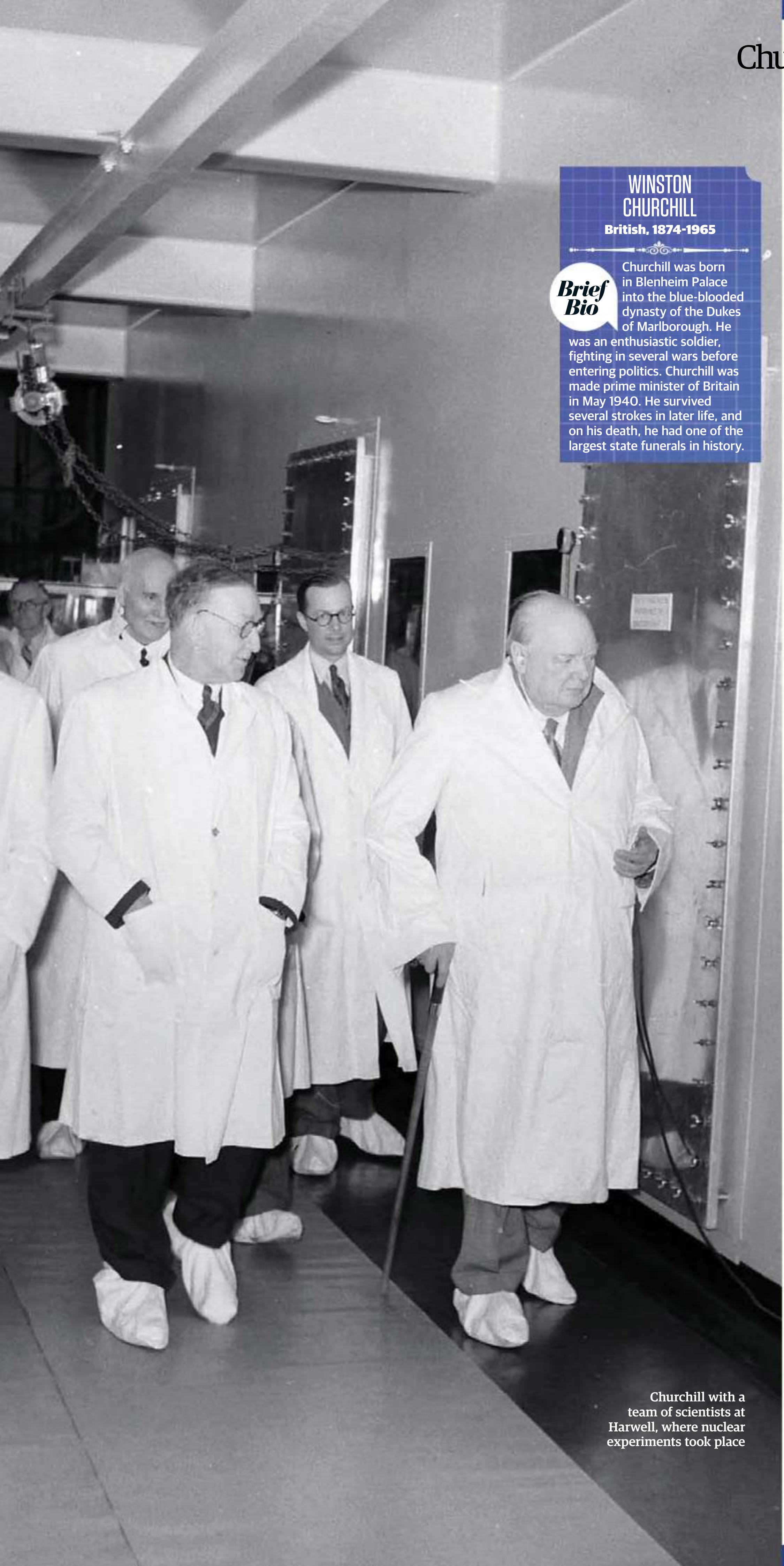
PEARSON

CHURCHILL BRITAIN'S MAD SCIENTIST

Writer, soldier, Nobel Prize winner: few leaders have Winston Churchill's chequered background, nor can lay claim to inventions that led Britain to victory at war

Written by Ben Biggs

Churchill: Britain's Mad Scientist



Churchill with a team of scientists at Harwell, where nuclear experiments took place

WINSTON CHURCHILL

British, 1874-1965

Brief Bio

Churchill was born in Blenheim Palace into the blue-blooded dynasty of the Dukes of Marlborough. He was an enthusiastic soldier, fighting in several wars before entering politics. Churchill was made prime minister of Britain in May 1940. He survived several strokes in later life, and on his death, he had one of the largest state funerals in history.

Are we fighting this war with weapons or slide rules?" asked head of Bomber Command, Sir Arthur Harris, of the British prime minister. Time has muddied the exact point this happened but perhaps it was in Britain's darkest hours of 1941, when the indomitable island was the last bastion of hope against the relentless Nazi advance. Winston Churchill's reply was characteristically glib: "That's a good idea – let's try the slide rule for a change."

Churchill was neither scientist nor inventor. He was a military man who fought on the fringes of the British Empire in the late-19th and early-20th centuries. This was a time when working class boys could earn a name for themselves with active service, while those of aristocratic stock forged a talent for command in the forces that would serve them as they moved through the upper levels of society in later life.

Although the cost of the elaborate uniform, his horse and officer's mess bills far outweighed his income as second lieutenant of the 4th Hussars, for the highborn son of the Duke of Marlborough, military service was less a means of social advancement and more way to seek out the thrill of battle. He revelled in tradition yet despised convention: even while fighting dervishes in Sudan or the Pathan warriors in India, he was a prolific writer, going on to become a world-famous war correspondent. Outside of war journalism, he stressed the importance of technology and the pivotal effect it can have on the course of history. He even won the Nobel Prize for literature. In his 1931 essay *Fifty Years Hence* he predicted wireless telephones, materials many times stronger than steel, the atomic bomb and lab-grown meat – a technological oddity that is still yet to become an everyday item over 80 years later.

It was with this tenacity, foresight and keen eye for opportunity that he went on to become the unconventional proponent of science and technology that Britain needed to survive the early war years. Churchill liked to keep abreast of the latest toys that could turn the slightest advantage in the war and immersed himself in the day-to-day of Britain's wartime scientists and engineers. He created the PM's Statistical Branch, comprised of economists and a scientist to act as a think-tank for Churchill. It acted alongside Churchill's personal scientific advisor to streamline the administration of science and invention. With this powerful commission in place, Churchill was able to improve the effectiveness of depth charges, revolutionise radar and provide the foundation for the science that would go on to harness the power of the atom in the Manhattan Project. Without Churchill's vision, Alan Turing and his colleagues would have been blocked by a bureaucratic system that couldn't see the value in spending resources on expanding Bletchley Park. The 'unbreakable' German Enigma code might never have been cracked.

From tanks to protection from the German Blitzkrieg, to radar and the atomic bomb, Churchill had a personal hand in every British World-War-II invention of any importance, leaving a legacy that has outlived the war and his death in 1965.

CHURCHILL AND THE TANK

Shunned by military men for nearly a century, it took the foresight of a man who was yet to lead Britain to bring the modern tank onto the battlefield

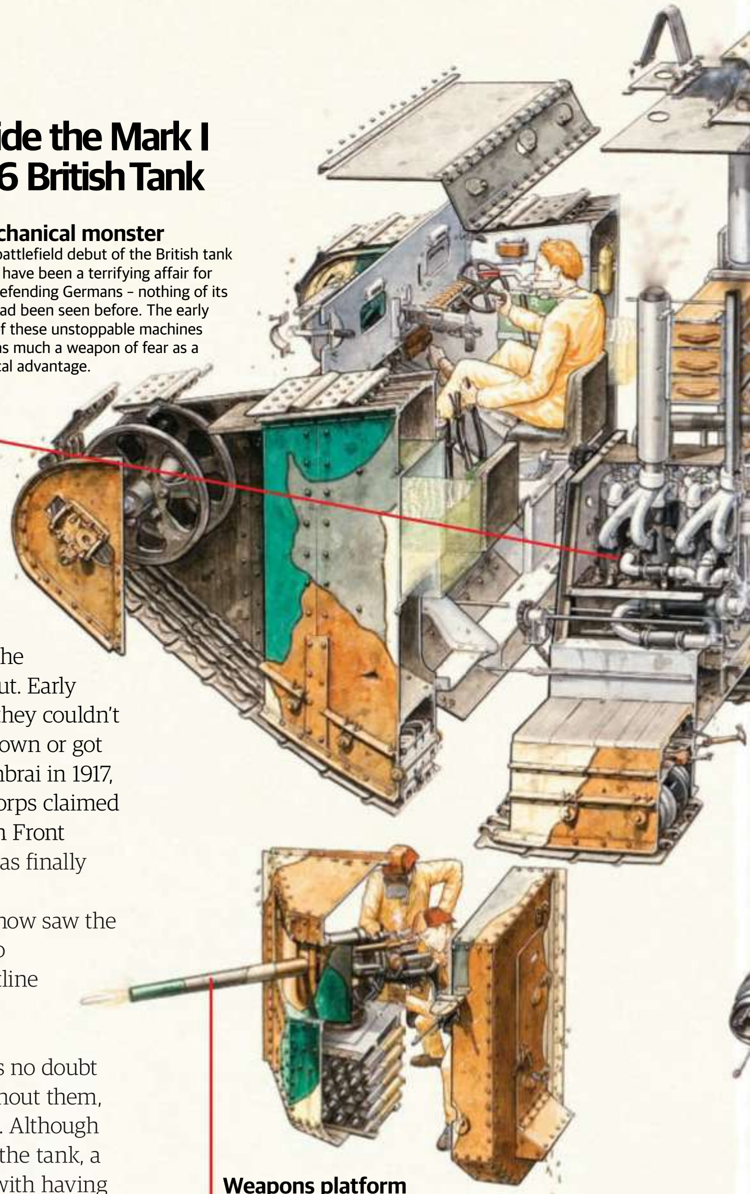
Although no single person can solely be credited with the tank, World War I and the then-first lord of the Admiralty, Winston Churchill, were instrumental in bringing it to the battlefield.

The early evolution of the tank begins in the late-18th century, when a crude version of the caterpillar track was dreamed up by politician, writer and inventor Richard Lovell Edgeworth. Conflict, of course, saw this invention more readily used. In the mid-19th-century Crimean War, the UK military employed a small number of steam-powered tractors with caterpillar tracks to get around the muddy battlefield more easily. It was as close to the modern tank as it would get for nearly 70 years, but like so many inventions, it took a little creativity and lateral thinking to give these vehicles armour and house guns inside them; to turn them from logistical tools to military weapons.

Various forms of motorised weapons platforms were invented and offered to the British war effort over the following decades, but they were seen as novelties and weren't taken seriously until Churchill pressed for their development in 1915. He understood that these 'land ships' would be able to advance through the barbed wire of the enemy defences and gain ground, so committed funding available to the Admiralty. They were built by the Navy under the name of 'water tanks for Russia', which is where the name is derived from. The Army reluctantly took the programme over and at the Battle of the Somme in 1916, tanks made their debut. Early versions were notoriously unreliable; they couldn't cross trenches and they often broke down or got stuck. It wasn't until the Battle of Cambrai in 1917, when 474 tanks of the British Tank Corps claimed 19 kilometres (12 miles) of the German Front and 10,000 prisoners, that the tank was finally considered a success.

After World War I, many countries now saw the tactical value of the tank and began to develop their own, alongside the frontline tactics that allowed them to quickly overwhelm the enemy with this new technology. By World War II there was no doubt about it: the tank had arrived and without them, your country had already lost the war. Although many have claimed to have invented the tank, a royal commission credited Churchill with having the "receptivity, courage and driving force" to turn the concept into a viable instrument of war.

Inside the Mark I 1916 British Tank



Mechanical monster
The battlefield debut of the British tank must have been a terrifying affair for the defending Germans – nothing of its like had been seen before. The early use of these unstoppable machines was as much a weapon of fear as a tactical advantage.

Weapons platform
WWI tanks were divided into 'females', with just a machine gun, and 'males', which also had an artillery turret. Both types were very effective.

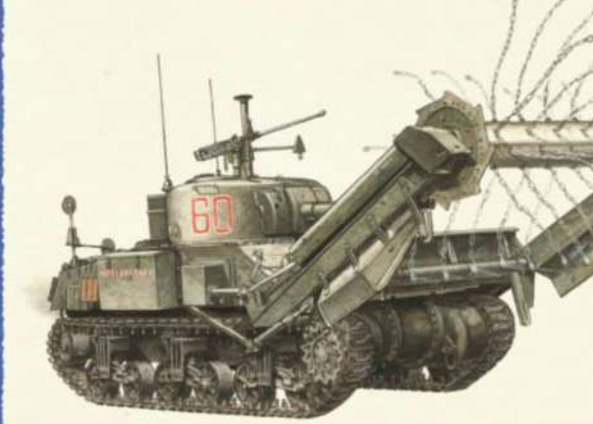
HOBART'S FUNNIES

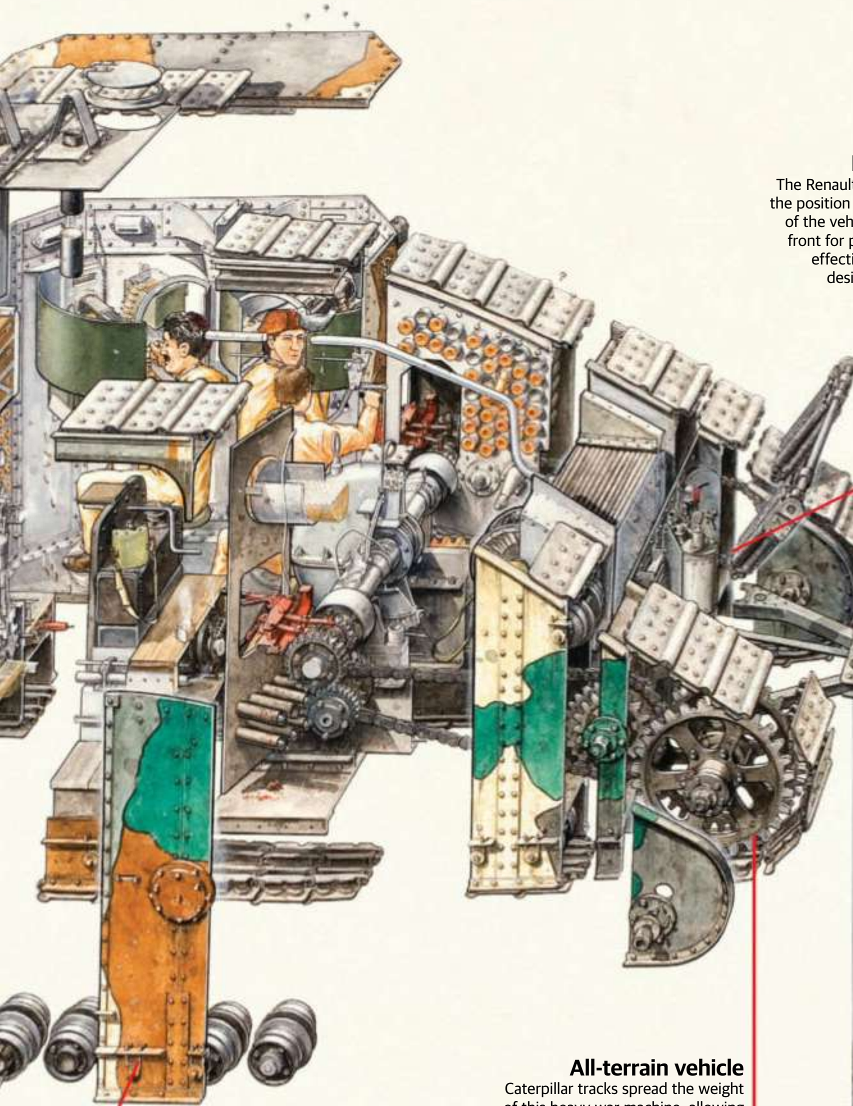
The major general's modified tanks may have looked odd, but their battlefield advantage was no laughing matter

By World War II a more-or-less standard design for tanks had been established for maximum battlefield effectiveness, but there were still some common situations this conventional combat vehicle could not overcome: cue British military engineer Major General Percy Hobart. In 1943 he was tasked with training the crew and finishing the development of the 'funnies' – tanks with unusual modifications that provided a solution for a swift penetration of the French mainland, via the heavily defended French coast. Once the Allied landing had started, the terrain would favour the Nazi counter-attack, so both obstacles and German defenders had to be cleared fast. To that end, several types of 'funnies' were developed, including a mine clearer, a flame-thrower, a bridge-layer and an amphibious tank. Although the US forces made more limited use of them than the Brits, they saved many lives on the Allied side and the concept for some are still in use for modern combat today.

Crab Tank

Modification: Mine flail **Weight:** 25 tons
Range: N/A **Max speed:** 26km/h (16mph)





Rear-wheel drive
The Renault FT light tank pioneered the position of the engine at the rear of the vehicle and the turret at the front for protection and maximum effectiveness. It's the standard design for most tanks today.

All-terrain vehicle
Caterpillar tracks spread the weight of this heavy war machine, allowing it to travel across almost any terrain – including the thick mud of the Western Front.

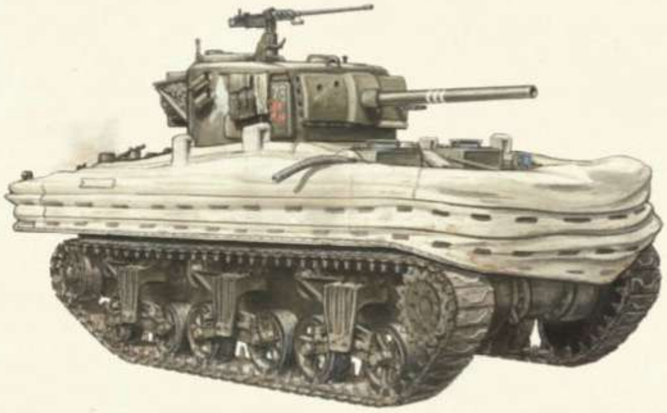
Bulletproof
Caterpillar tracks spread the weight of this heavy war machine, allowing it to travel across almost any terrain – including the thick mud of the Western Front.

> "Nearly all battles regarded as masterpieces of the military art… have been battles of manoeuvre in which very often the enemy has found himself defeated by some novel expedient or device."

Winston Churchill trying out the turret of a Churchill I tank

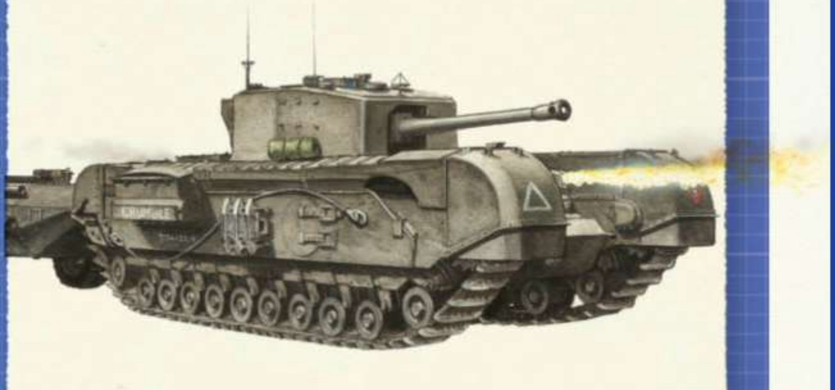
Duplex Drive (DD)

Modification: Amphibious **Weight:** 30.3 tons
Range: 2,103m (6,899ft) **Max speed:** 6km/h (16mph)



Crocodile

Modification: Flame-thrower **Weight:** 38.5 tons
Range: 110m (360ft) **Max speed:** 24km/h (15mph)



CHURCHILL'S TOYSHOP

What was this top-secret British weapons laboratory that not even the highest-ranking generals could access?

Churchill realised there were too many levels of government between his senior position as first lord of the Admiralty in 1939, and the 'boffins' who invented the toys he believed were crucial to Britain's war effort. Churchill wanted complete transparency between himself and a team of inventors who would report directly to the soon-to-be prime minister, outside the normal channels of government. Thus, Ministry of Defence 1 (MD1) was created, headed by Royal Engineers' Lieutenant-Colonel Joe Holland. He brought in Major Millis Jeffries, a sapper in the Royal Engineers, to take care of new technological solutions for guerilla warfare against the enemy, in a sub-department called MD1(c).

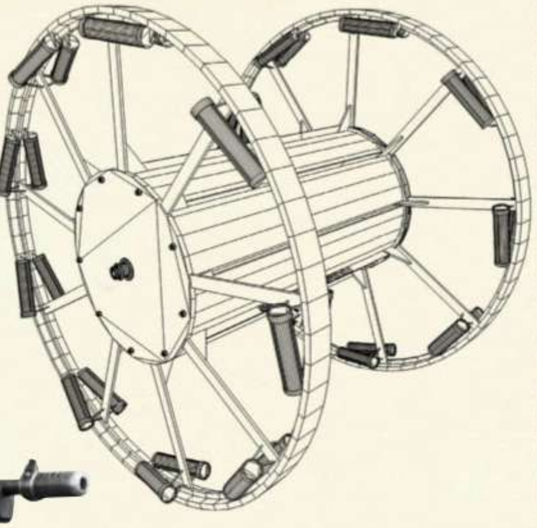
Jeffries himself also went about recruiting – from a more unlikely source. In July 1939, two months before Britain declared war on Germany, he approached the editor of *Armchair Science* magazine, Stuart Macrae, looking for information on magnets. Macrae was contracted to advise Jeffries, but the partnership between the two men proved so fruitful that Macrae was deputised, given an honorary rank and a uniform.

Their first product was a resounding success. Following his experiments with powerful magnets in a bathtub in his garage, Macrae helped create the limpet mine, which was used in numerous covert operations to sink enemy ships and still sees some use today. Trigger mechanisms for explosives were next, including tripwires, pressure switches, altitude switches and all manner of ways to set off an explosive charge. MD1(c) eventually moved out of the single room it occupied in the War Office in London, into a workshop and then into a country mansion to avoid air raids.

Jeffries and Macrae's department steadily grew with support from the prime minister, who appreciated the value of their work. Because they reported direct to Churchill, officers outside these lines of communications referred to MD1(c) as 'Churchill's Toyshop.'

Panjandrum

The Atlantic Wall was a series of robust fortifications built after 1942 by the Nazis to defend against an anticipated Allied invasion. It posed a significant obstacle for Allies, and so a solution to create a breach large enough to allow a vehicle through was dreamed up by one of Churchill's military think-tanks. The Panjandrum was a strange-looking weapon, made up of two large wooden cartwheels with a ton of explosives sandwiched between them inside the axle. Cordite rockets were to propel it at up to 97km/h (60mph), which even without the deadly force of the explosives it carried, was terrifying considering it weighed around 1,800kg (4,000lb).

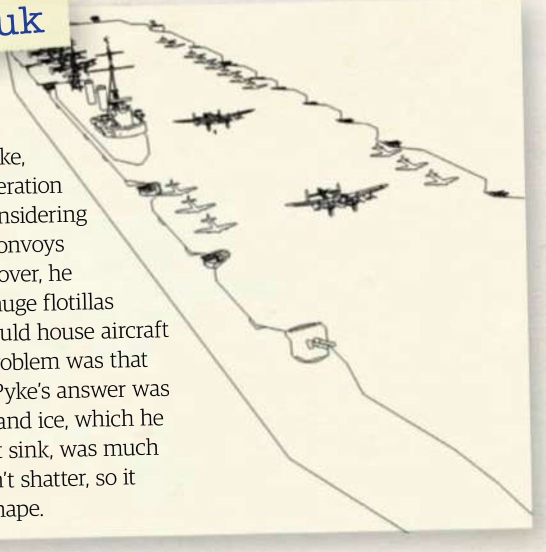


Limpet mine

The idea of using a human torpedo to attach explosive charges had been around since the end of World War I. Churchill's version was attached by frogmen who used the most powerful magnet in the world at the time to attach around two kilograms (4.5 pounds) of explosive to an enemy ship, capable of punching a large hole in the hull.

Project Habbakuk

Steel and aluminium were at a premium during the war, so when inventor Geoffrey Pyke, who worked at Combined Operation Headquarters (COHQ), was considering a way of protecting Atlantic convoys beyond the reach of aircraft cover, he realised the answer was ice: huge flotillas carved out of icebergs that could house aircraft and provide a runway. The problem was that icebergs tend to roll over, so Pyke's answer was a combination of wood pulp and ice, which he called 'pykrete'. This wouldn't sink, was much stronger than ice and wouldn't shatter, so it could easily be carved into shape.



PIAT

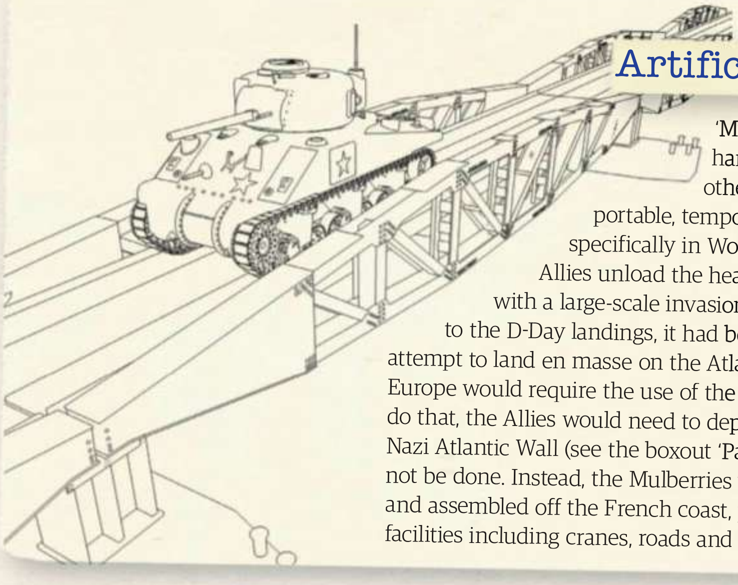
By the middle of World War II enemy tanks had become increasingly well armoured, to the point that they were impenetrable to the outdated infantry grenade launchers. The Projector, Infantry, Anti-Tank (PIAT) was a portable mortar system that used a powerful spring to arm and launch a 1.1kg (2.5lb) bomb with a shaped charge up to 110m (360ft) away.

Sticky bomb

This was a kind of grenade consisting of a glass sphere filled with over half a kilogram (around 1.5 pounds) of nitroglycerine, covered with an extremely sticky adhesive and encased in metal. Its handle contained a five-second fuse and a safety pin that, upon being pulled, released the metal casing and exposed the adhesive. In theory, the sticky bomb could be attached to a passing tank.

> "To adopt a defeatist attitude in the face of such a threat is inexcusable until it has definitely been shown that all the resources of science and invention have been exhausted."

Artificial harbours



'Mulberries', or artificial harbours as they were otherwise known, were portable, temporary harbours designed specifically in World War II to help the Allies unload the heavy cargoes associated with a large-scale invasion. In the years leading up to the D-Day landings, it had become apparent that any attempt to land en masse on the Atlantic coastline of Western Europe would require the use of the French harbours. And to do that, the Allies would need to depend on penetrating the Nazi Atlantic Wall (see the boxout 'Panjandrum'), which could not be done. Instead, the Mulberries were to be transported and assembled off the French coast, providing mobile port facilities including cranes, roads and piers.

Time pencil

Otherwise known as 'pencil detonators' or officially as 'Switch, Number 10, Delay', these were pencil-shaped timed fuses with a vial of corrosive copper chloride at one end. To activate it, the vial was crushed so the copper chloride would begin to dissolve a metal wire. Once the wire snapped, it released a spring that propelled a striker down the hollow tube to the percussion cap, to detonate the explosives it had been inserted into.

INVENTIONS THAT HELPED WIN THE WARS

It's said that war is the mother of invention, so here are a handful of technologies that owe their existence to WWII

Radar

One of the most famous examples of a British WWII invention is radar. The failed original concept was to concentrate radio waves into a 'death-ray', but the early detection system that resulted from this project proved far more valuable.

Penicillin

Although the mould, Penicillium motatum, was discovered to be a powerful anti-bacterial agent nearly a century before, it wasn't until 1939 that penicillin as we know it was developed, saving countless lives on the battlefield.

Jet engine

The Germans saw the value in the jet engine and put the might of their military R&D department behind it, resulting in one of the most advanced fighter planes of WWII, the Messerschmitt Me 262. Ironically, British scientist Frank Whittle made a prototype of the engine years before, but received little funding from the government.

Computer

Charles Babbage's computer was dreamed up in 1812 but deemed practically useless. But a similar machine, the Colossus, was used to emulate a German Enigma machine to crack the Lorenz cipher many times faster than humans could.

Sonar

A system for detecting underwater sound, called ASDIC, had been in development by Britain as far back as 1916, but upon entering WWII, the technology was handed over to the US, which developed the more effective Sonar.

BUILDING THE ATOMIC BOMB

An unlikely nuclear visionary, Churchill didn't let his fear of the atomic bomb's awesome power stand in the way of technological progress

"Might a bomb no bigger than an orange be found to possess a secret power to… blast a township at a stroke?"

Perhaps inspired by the 1914 HG Wells novel *The World Set Free*, Churchill was fascinated with the concept of a nuclear weapon long before scientists had learned how to make one. Already a prolific writer and respected journalist, Churchill wrote several articles on the potential of atomic energy both as an energy source and a weapon, in the decades before he became leader. His scientific advisor, Frederick Lindemann, had even drafted an essay by Churchill called *Fifty Years Hence*, on the world's nuclear dawn. So by the time he was a prominent voice in Parliament, Britain's nuclear program was high up on his agenda.

Following the successful splitting of the atom in Germany, 1938, Britain was playing catch-up. It fell to two scientists, refugees from Nazi Germany, Otto Frisch and Rudolf Peierls, to finally crack the problem of making an atomic bomb for Britain in 1940. Churchill was concerned about the scale of the bomb's destructive power but wasn't going to "stand in the way of progress." Thus the British nuclear program was launched under the codename 'Tube Alloys'. Production of the uranium isotope necessary for the bomb started in North Wales with the now-defunct company ICI (Imperial Chemical Industry) playing a big role. This was a resource-intensive process, with the full weight of Britain's industry and economy behind the rest of the war effort, and aviation taking up 40 per cent of its output. Many believed the project was too ambitious to be achieved in Britain alone. Thus the birth of the atomic bomb would take place on the other side of the Atlantic.

The British nuclear programme was first exported to Canada where, following a proposal by President Roosevelt of a joint Anglo-American programme, Britain handed over its nuclear research and some of its scientists in 1943. The Manhattan Project was born, going on to create the infamous 'Fat Man' and 'Little Boy' atomic bombs that were dropped on Japan, ending the war in 1945.

The atomic bomb 'Fat Man' being assembled

World's biggest explosions

Fat Man
Yield:
21 kilotons

Ivy King
Yield:
500 kilotons

B53
Yield:
9 megatons

Castle Bravo
Yield:
15 megatons

Tsar Bomba
Yield:
50 megatons

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The first British atomic test took place in 1952 on the Montebello Islands

DID CHURCHILL START THE NUCLEAR REVOLUTION?

Expert opinion

Andrew Nahum, lead curator on the Churchill's Scientists exhibition at the London Science Museum, shares his view.

How much of a hand in the wartime inventions did Churchill have?
Enormous. Some might say he encouraged too much as he wanted to pursue anything that might give an edge, including giant icebergs converted into aircraft carriers! He was interested in the whole sweep of 'technoscience' and he always was, from his early days as a cavalry officer in India.

How much influence did he have on Britain's atomic efforts?
In Britain two refugee scientists, Rudolf Peiers and Otto Frisch, worked out a theoretical model for a fission bomb of enormous power resulting in a paper called *The MAUD Report*. When Churchill read that an atomic bomb might be possible he wrote in the margin: "Good." He said "Although I'm quite content with current explosives, I would not want to stand in the way of progress."

Churchill sounds like he was as frightened by the nuclear age as he was excited by it.
That's quite fair. He was quite conflicted and in 1951, when he realised how far the British atomic program had gone, he had talked about whether we "should have the art, but not the article." When the H-bomb came along, Churchill was profoundly disturbed by the prospect of world annihilation. His last great speech to the House of Commons was about the dangers of the H-bomb. That speech was partly intended to get agreement to proceed with that next step of development. However, although he was profoundly disturbed, he was not prepared to say that by standing back, Britain could make the world better, given his experience of two world wars. His challenge was whether the international community might learn wisdom or whether "the Almighty might tire of humanity."

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BOOK REVIEWS

All About History's pick of the newest and most interesting history books

UNEXPECTED BRITAIN:
A JOURNEY THROUGH OUR HIDDEN HISTORY

Take a trip off the beaten path of British history

Author **Stuart Laycock and Philip Laycock** **Publisher** **Amberley** **Price** **£16.99** **Released** **Out now**

If you've read all around the history of Britain and are desperate to discover something new, or perhaps are just looking for some fun and light-hearted reading, *Unexpected Britain* is well worth a look.

Unexpected Britain traces the story of Britain from just before the Roman Empire, right up to today. Rather than covering the most famous events in the country's history, it uncovers forgotten - and often unusual - stories and facts that shine a new light on Britain's past. The book contains 52 chapters, each dealing with separate stories and events, many spanning less than five pages. These chapters cover an eclectic mix of events such as the time an elephant once walked the Thames, the US invasion of Cumbria, and the first and last English pope. Many of the chapters deal with a single, often humorous event, while others detail the lives of some remarkable Britons who have all but vanished from the history books. The best thing about the structure of the book is that it works perfectly for those who wish to pick and choose what they read about. The chapters are all ordered chronologically and are sorted by era on the contents page. If you wish to read this unusual account of British history from beginning to end you can, but you can also easily skip to any chapter that piques your interest.

If you've flicked through Stuart Laycock's previous book *All The Countries We've Ever Invaded*, you'll have an idea of the tone. The book takes a humorous, light-hearted approach to most of the subject matter. However, that's not to say it doesn't have a basis in fact. You can immediately tell that each story has been well researched, and the light, jovial tone simply makes some of the fact-heavy chapters easier to digest. *Unexpected Britain* is a sure hit for fans of *Horrible Histories* as it describes lots of unbelievable but true events in an entertaining way.

Because the chapters do not really connect to one another this isn't a book that you'll likely curl up with for the night, but it's ideal to pick up when you have a few minutes to spare to discover something new about Britain's history. You could even read one chapter a day, or a week; it's entirely up to you and the structure lends itself well to flexible reading.

Unexpected Britain sets out with the idea of exploring what Britain's history book would look like if it was to explore the bits that nobody knows, and that it does successfully. The entire book covers history from different angles, and may well just challenge what you perceive of the nation's past. If you wish to travel off the beaten path of history and are longing to discover some unusual facts, compelling stories or even just some amusing trivia tidbits about Britain, then this book is ideal for you. If you're looking for a comprehensive and in-depth study, steer clear; this book only offers a taste of the history it touches upon, and you'll have to go hunting yourself if you wish to find out more.

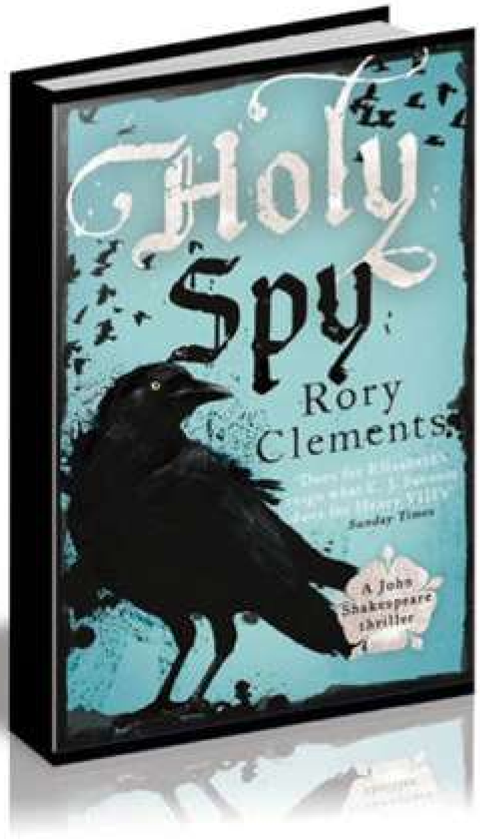
Frances White

Pope Adrian IV, the first and last English pope

STUART LAYCOCK & PHILIP LAYCOCK
UNEXPECTED BRITAIN
A Journey THROUGH OUR HIDDEN HISTORY
FROM THE AUTHOR OF THE HUGELY SUCCESSFUL
All the COUNTRIES WE'VE EVER INVADED

HOLY SPY To thine own self be true

Author Rory Clements **Publisher** Hodder & Stoughton
Price £14.99 **Released** 26 February 2015



The seventh full novel of the enthralling John Shakespeare series, this latest instalment sees the intelligencer attempt to infiltrate the Pope's White Sons, who plot to restore Mary Stuart to the throne. Despite its quick pace and readability, much of the detail surrounding the whys and hows of the royal line are glossed over, *Holy Spy* is not for those without a keen interest in the Elizabethan period. We are immersed immediately into a world of strong-willed characters, determined men, whose schemes are not bolstered by an explanation of the politics at hand. This assumed knowledge may be too alienating for some, but it saves a great deal of time, allowing Clements to get right into the dirty business of sordid secrets.

Holy Spy is slightly disappointing in regards to some of its supporting characters, however. While their roles are perfectly suited to the era, the female characters in particular are comparatively one-dimensional, which is a bit of a shame considering how fleshed-out and varied their male counterparts are. It's slightly jarring, considering the thrilling climax the plot builds to, and how gripping the story itself turns out to be.

Holy Spy has a relatable realism that only comes from being incredibly familiar with the period. Its only other potential flaw is the speed at which the number of players is introduced. Little to no time is spent on educating the reader on the major characters; the likes of Babington, Walsingham and Gifford must already hold some significance to the reader from previous novels, or much of the meaning of their actions can be lost. For those fully aware of the plots and schemes surrounding the Tudor/Stuart power struggles, however, this matters very little. All in all, *Holy Spy* is a great instalment in this expansive dramatic series.

Rebecca Richards

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And what of the farmer? Michael Abney-Hastings, born in Sussex, educated in Yorkshire until he moved as a teenager to the small town of Jerilderie, Australia. In 2004 a TV documentary showed his link back to Edward IV, through the Plantagenet line.
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THE POLITICS OF PIRACY

The real pirates of the Caribbean

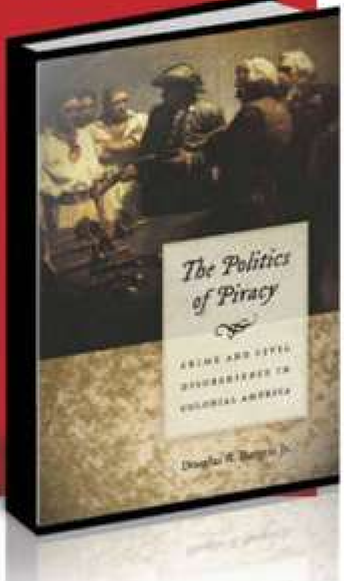
Author Douglas R Burgess Jr **Publisher** Oxbow Books **Price** £25 **Released** Out now

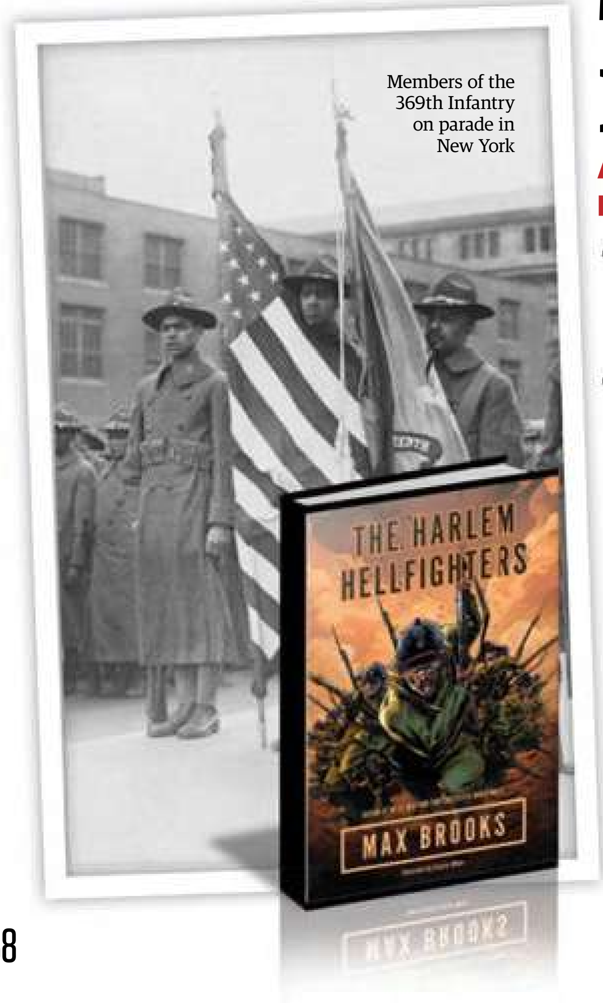
It is well known that piracy wasn't all Blackbeard and Captain Jack Sparrow, but there is still a lot more to your average buccaneer than you might think. In *The Politics Of Piracy: Crime And Civil Disobedience In Colonial America,* Douglas R Burgess Jr assesses the true history of piracy. The book begins with well-meaning customs officer Robert Snead on the trail of infamous pirate Henry Every. Snead gets close to capturing the pirate only for his superiors to intervene in Every's arrest. This introduction provides the allegory for the remainder of the book: Was the relationship between pirates and the imperial powers all that it seemed? The author declares it as "a story that has never been fully told, until now."

Piracy in colonial America was born as a rebellion against the British and Spanish crowns' injustice to colonists. The vague and contradictory laws only fuelled the growth of pirates so they came up with a new approach: use the pirates for their own gain. The government would hire them, rebrand as 'privateers', and use them to carry out their objectives in return for a fee. What Burgess gets across well is the use of piracy as a political weapon and how dastardly yet successful the authorities' plan was. His description of the sinking of Jamaica's Port Royal is a highlight, as are case studies of pirate havens across America.

Don't come to *The Politics Of Piracy* looking to be entertained by a stereotypical Disney tale of love and treachery on the high seas. Do come for a true story of scheming empires and a rare insight into the real world of piracy. That in itself is entertaining and engaging enough.

Jack Griffiths


The Politics of Piracy
Crime and Civil Disobedience in Colonial America
Douglas R. Burgess Jr.


Members of the 369th Infantry on parade in New York

THE HARLEM HELLFIGHTERS

World War Hell

Author Max Brooks **Publisher** Duckworth Overlook
Price £12.99 **Released** Out now

Max Brooks knows how to write about war, be it about a fictionalised, apocalyptic zombie war or the very tangible brutality of World War I, as he shows with *The Harlem Hellfighters*. This graphic novel, illustrated in stark black and white by Caanan White, tells the - mostly - true story of the 369th Infantry Regiment in the trenches of the Western Front. The regiment, made up of African-Americans and African Puerto Ricans, faced incredible adversity, not just against the Germans on the battlefield, but also the racism of their own superiors and fellow countrymen. Only getting to serve in battle as part of French forces, who showed them more tolerance than their own, the German-dubbed Harlem Hellfighters ended up serving 191 days in the field, longer than any US unit. They set many more milestones in the war, such as being the first Allied troops to reach the Rhine at the end of the war, Sergeant Henry Johnson being the first American to receive the French Croix de Guerre medal, and achieving the rare feat of never losing a trench to the enemy.

However, Brooks' novel succeeds not only in recounting these victories, but also - and even more viscerally - the dramatic struggle they faced, even before ever going into battle; a struggle for humanity as much as for democracy.

There are fictionalised elements within the story, such as added characters and incidents, but instead of subverting the truth of history, these serve to underline the story's message and distil the violently harsh reality of the regiment's life.

Even in black and white, the brutality of war shines through each frame, made more blunt because of its lack of sensationalist blood splatters or balls of explosions.

Brooks' *Harlem Hellfighters* is a 300-page fast-paced page-turner and mostly rooted in historical fact. It's an extremely quick read, but the story will stay with us for a long time.

Erlingur Einarsson

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100TH ANNIVERSARY WWI COMMEMORATIVE MEN'S WRISTBAND

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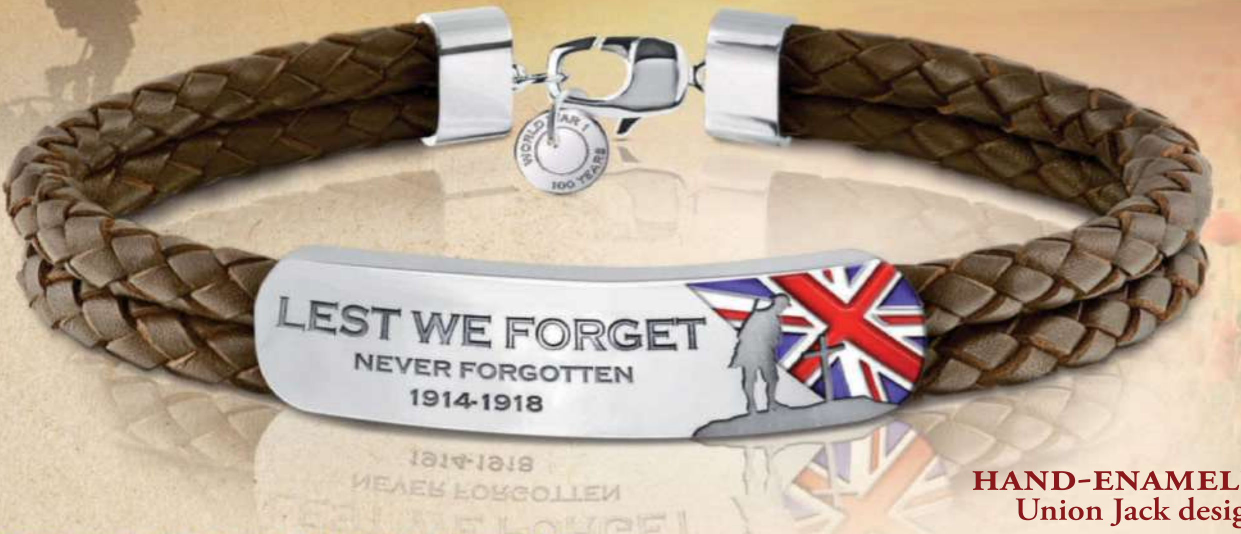

They shall grow not old, as we that are left grow old:
Age shall not weary them, nor the years condemn.
At the going down of the sun and in the morning,
We will remember them.

Laurence Binyon

HAND-ENAMELLED
Union Jack design
on the front plaque

LEST WE FORGET
NEVER FORGOTTEN
1914-1918

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LINCOLN'S BODY Abe's odyssey

Author Richard Wightman Fox **Publisher** Norton **Price** £18.99 **Released** March 2015

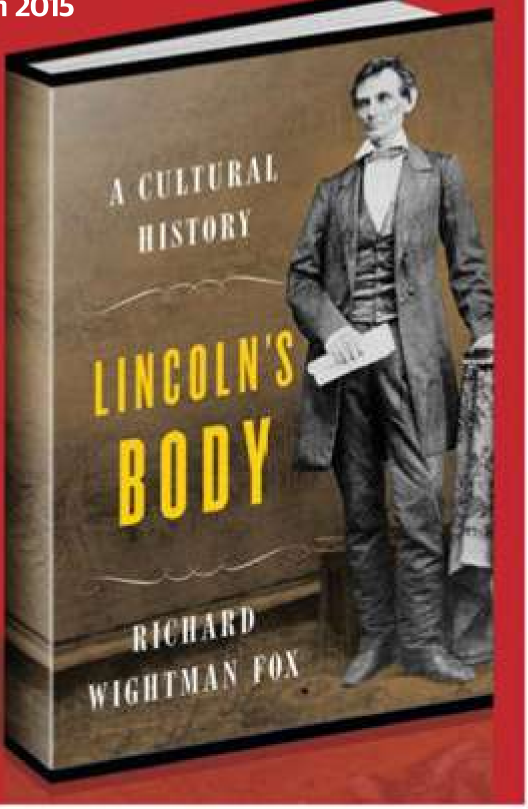
One of the drawbacks of the straightforward biography format is that the time spent reflecting on the cultural legacy of the subject is often minimal in comparison to the space devoted to the events that preceded it. *Lincoln's Body: A Cultural History* bucks this trend, with an insight into just how far reaching an impact the Great Emancipator had.

Taking various physical descriptions of Abraham Lincoln's physical form as his starting point, author Richard Wightman Fox succinctly covers a wide canvas, from citizens' reactions to his dead body as it was transported around the States and the subsequent memorial in his honour, to his influence on figures like Martin Luther King and Barack Obama, as well as depictions in popular culture from the likes of Henry Fonda in *Young Mr Lincoln* (1939) and Daniel Day-Lewis in *Lincoln* (2012). Few stones are left unturned in Wightman Fox's attempts to craft a complete overlook of the epilogue to Lincoln's life, and even fewer areas of society into which his influence stretched are overlooked in the book.

The lingering - and often unnecessarily elaborate - reflections on Lincoln's body occasionally threaten to distract from the far more interesting aspects of the subject matter in the book's first half, but by the time the book reaches the events of the 20th century and the emergence of figures like King and JFK, it undoubtedly finds its stride. By focusing predominantly on the public discourse relating to Lincoln, Wightman Fox is able to cleverly circumvent any questions regarding whether Lincoln was as great as the world remembers him, although his critics are still given lip service and leg room. With that he avoids the well-known quandary of becoming too enamoured with his subject matter.

Occasional meandering monologues on Lincoln's physical form aside, there's little to find fault with this treatise on the indelible footprints of one of the USA's most memorable statesman. Besides, it's hard to be too critical of a book that finds room to discuss the Emancipation Proclamation and *Abraham Lincoln: Vampire Hunter* on the same page.

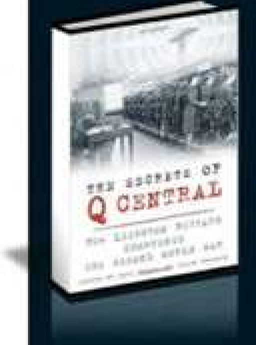
Steve Wright



HISTORY of WAR RECOMMENDS...

The Secrets Of Q Central

Author: Paul Brown and Edwin Herbert
Price: £15 **Publisher:** Spellmount



Intelligence has long been one of the most fascinating realities of warfare. What began as a project of local interest has turned into a story of huge national significance - and this book does it justice, pulling apart all facets of Q Central's operation. It's interesting to think that, had that research not been done, this story may have remained largely untold - a rarity for World War II.

MERCHANT ADVENTURERS:

THE VOYAGE OF DISCOVERY THAT TRANSFORMED TUDOR ENGLAND

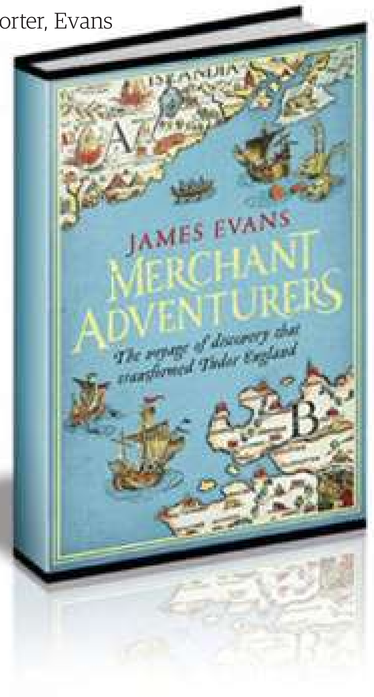
The story of how a few brave men made waves in British history

Author James Evans **Publisher** W&N **Price** £20 **Released** Out now

Great Britain is well known around the world for its fine naval tradition. Names such as Nelson, Drake and Wellington litter the history books that describe just how Britannia rules the waves. Though this was not always the case, the moment that changed can be traced to a single voyage and a handful of visionary men detailed in James Evans' excellent book. Before the Tudor dynasty, Britain had little or no interest in exploring the world, but the discovery of the Far East and its wealth of jewels, spices and silks prompted a change of tack.

We are taken through explorer John Cabot's failed bid to find Asia before getting onto the main meat of the book - the accidental discovery of Russia as British sailors attempted to forge a northeastern passage to Asia. Evans has researched this book meticulously and adds colour with accounts from diaries and logbooks. Descriptions of the terrible conditions faced by sailors, the biting cold of the Russian winter and the splendour of their meeting with Ivan the Terrible are highlights. It is occasionally embellished with a bit of artistic license, but that adds to the drama without losing the sense of authority Evans builds up. Although early passages could be cut to make the wait for the main voyage a little shorter, Evans delivers a masterclass in creating an entertaining, accessible and interesting book from a potentially dry subject. The heroic sailors, the temperamental monarchs and the stormy seas are all vividly brought to life in a faithful account of a series of journeys that kick-started Britain's growth into a naval force and inspired a nation to take to the seas and explore the world.

Jamie Frier



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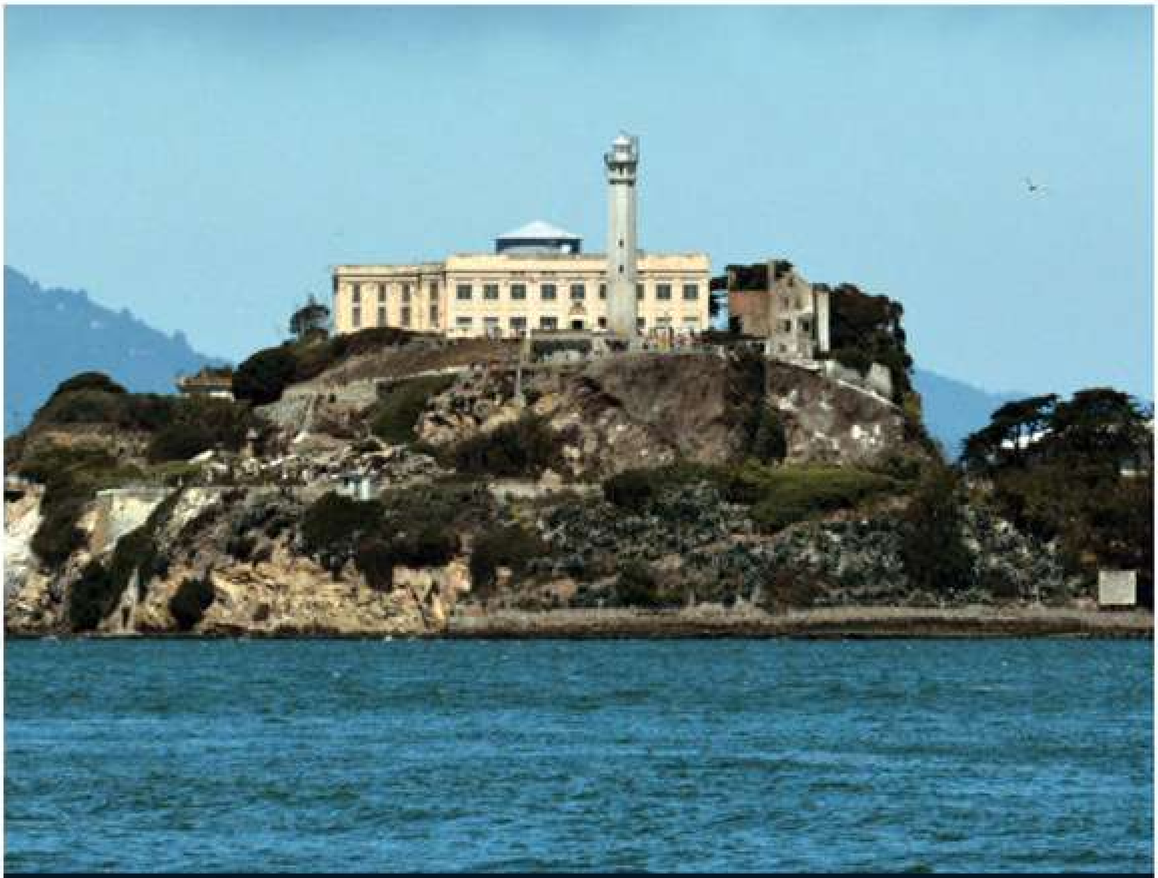


Why was Alcatraz so difficult to escape from?

36 prisoners attempted to escape Alcatraz but were either captured, shot or drowned

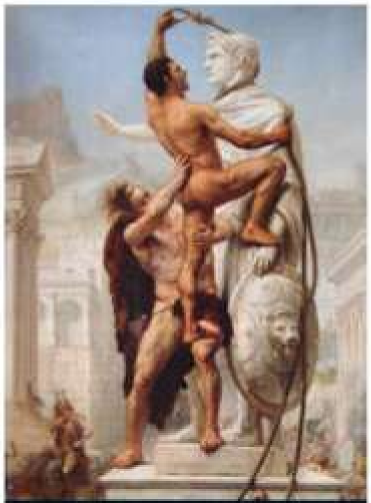
Jason Phillips, York

Alcatraz joined the Federal Bureau of Prisons in 1933 and quickly became one of the most terrifying prisons in the world. Lying just over two kilometres (1.2 miles) off the San Francisco shoreline, 'The Rock' was locked down with maximum security and run with military order and precision. If you were lucky enough to escape its fortified walls, there was still an expanse of sea to conquer. The waters surrounding the island contain intense currents that make a swim back to the mainland almost impossible. The forbidding island's most famous resident was undoubtedly gangster Al Capone who spent four-and-a-half years under lock and key there.

How many times has Rome been sacked?

Helen Jenkins, Blackburn

The walls of the Eternal City have been breached at least six times in history. The most famous, and the one that had the most significance, was the 410 CE sack by the Visigoths. Led by Alaric I, this was the first time Rome had been invaded in 800 years and shook the empire to its very foundations. Although Rome was no longer the capital – it had been replaced by Ravenna – it was still an important centre, and many historians believe that the great civilisation never fully recovered from this setback. A letter from the time written by Jerome poignantly states: "The city which had taken the whole world, was itself taken." Other famous sacks include the Vandal sack of 455, the Holy Roman Empire invasion of 1527 and the 1870 capture of Rome by King Victor Emmanuel II, which completed the 'Risorgimento', the unification of Italy.



Hordes of Visigoths ransacked the Eternal City as the Roman Empire was powerless to resist the growing Barbarian threat

This day in history 8 February

1238

Mongols burn Vladimir

The Mongol Empire, the largest contiguous empire in history, razes the Russian city of Vladimir to the ground. This event continues the Mongolian expansion into Russia, Poland and Hungary.

1250

Battle of Al Mansurah

The Battle of Al Mansurah deals a terrible blow for the crusaders in the Seventh Crusade. The entire army of 15,000 is massacred by the Ayyubid Dynasty and the French king, Louis IX, is taken prisoner.

1587

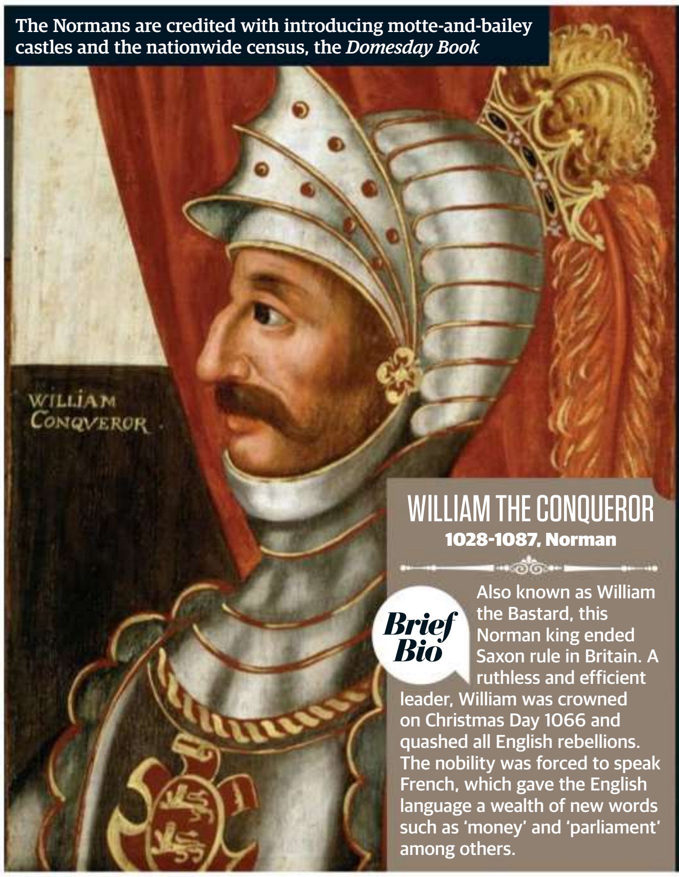
Mary, Queen of Scots executed

The former Catholic queen of Scotland, Mary has been imprisoned for 19 years by her cousin Elizabeth I. By 1587, she is seen as too big of a threat to the throne and is swiftly disposed of.

1904

The Battle of Port Arthur

Wanting to expand its empire, Japan draws first blood in the Russo-Japanese War at Port Arthur. Catching the Russian Navy by surprise, 150 sailors are killed, with war formally declared the next day.



The Normans are credited with introducing motte-and-bailey castles and the nationwide census, the *Domesday Book*

WILLIAM THE CONQUEROR

1028-1087, Norman

Brief Bio

Also known as William the Bastard, this Norman king ended Saxon rule in Britain. A ruthless and efficient leader, William was crowned on Christmas Day 1066 and quashed all English rebellions. The nobility was forced to speak French, which gave the English language a wealth of new words such as 'money' and 'parliament' among others.

What happened to the Normans?

Steve Lewis, Southampton

In 1066, Saxon England was rocked by the death of Harold II and his army by the invading Norman forces at the Battle of Hastings. Descendants from both Norse Vikings and Frankish tribes, the Normans got their name from their home territory in Normandy in Northern France. Their peak of expansion was in and around 1130 when their lands spread over England, Southern Italy, Northern Africa and many Mediterranean outposts. Despite being experts in trade and spreading their culture, the Normans always considered their lands in Normandy as their true home, but by the late-12th century, they had become too widespread and had begun to lose a sense of identity. By the time of the French campaigns in Normandy in 1202, the kingdoms of England and France had become completely different entities. The Anglo-French War (1202-1214) watered down the Norman influence as English Normans became English and French Normans became French. Now, no one was just 'Norman'. As its people and settlements were assumed into these two larger kingdoms, the idea of a Norman civilisation disappeared. Although no longer a kingdom itself, the culture and language of the Normans can still be seen in Northern France to this day.

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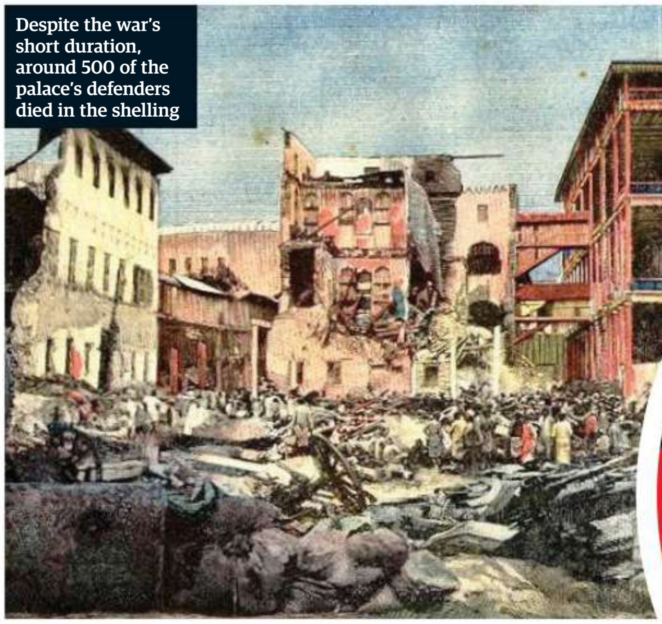
What was the shortest war ever?

Clive Johnson, Milton Keynes

The shortest war of all time is generally considered to be the 1896 Anglo-Zanzibar War, which lasted for all of 40 minutes. The British were involved in a power struggle in Zanzibar, Africa, as they demanded that Sultan Khalid bin Bargash abdicate in favour of the preferred Hamud bin Muhammed. After Bargash refused, the Royal Navy shelled the palace for 40 minutes until the sultan's flag was pulled down and surrender was negotiated. A classic – and very literal – example of gunboat diplomacy.



Despite the war's short duration, around 500 of the palace's defenders died in the shelling

Which country has been invaded the most? Find out at...
historyanswers.co.uk

1924

First state execution

Chinese gang member Gee Jon becomes the first person to be executed in a gas chamber after being convicted of murdering a rival mobster. The sentence is carried out in Carson City, Nevada.

1952

Elizabeth II becomes queen

The 25-year-old Princess Elizabeth is officially announced queen and head of the Commonwealth. The proclamation comes after the sudden death of her father, George VI, from lung cancer.

1974

Space marathon

Three NASA astronauts return to Earth after spending 85 days in the space station Skylab. The trio experiment with new diets and exercise routines to see how they affect life in space.

2005

Middle-Eastern truce

In a region no stranger to conflict, the leaders of Palestine and Israel sign a peace agreement after four years of continuous war. The truce is designed to begin "new era of peace and hope."

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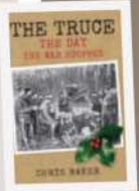

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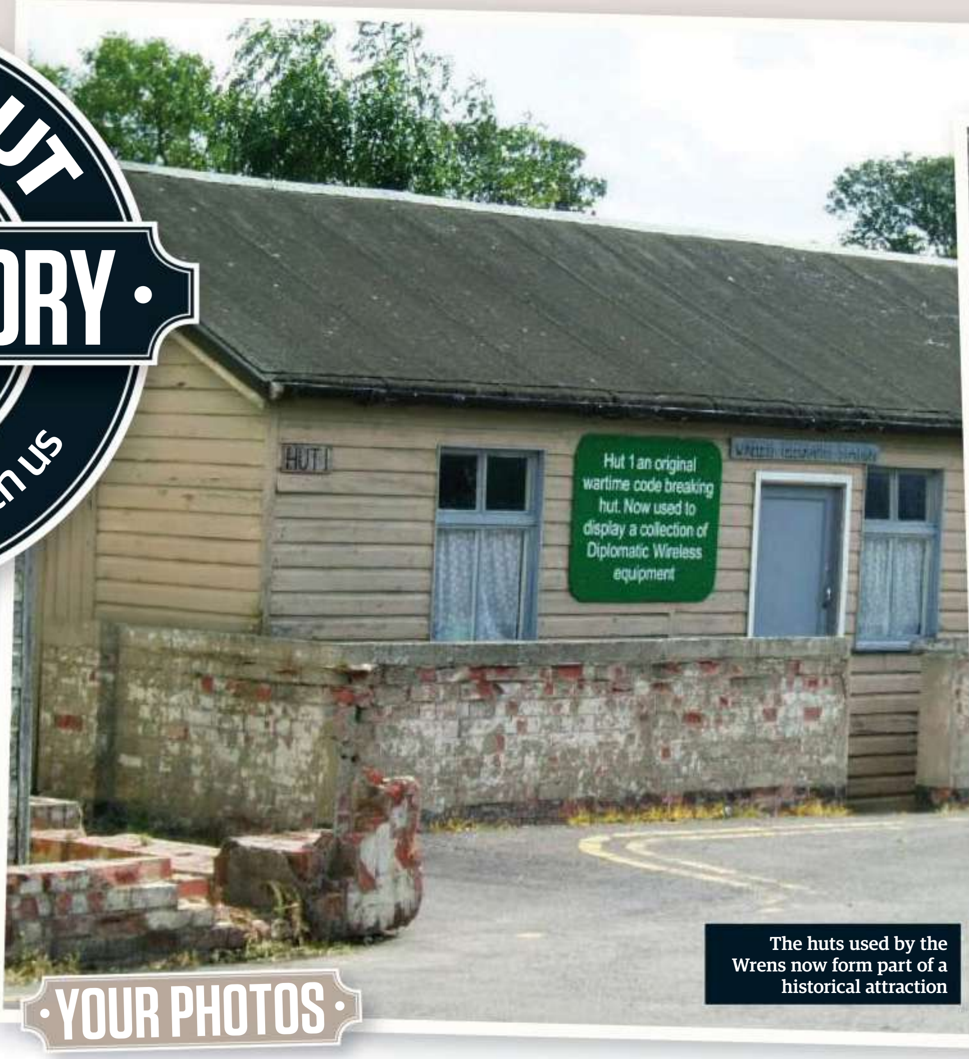

HUT 1
Hut 1 an original wartime code breaking hut. Now used to display a collection of Diplomatic Wireless equipment

The huts used by the Wrens now form part of a historical attraction

YOUR PHOTOS

A bird's-eye view of the war

Marion Hughes née Appleyard (submitted by her daughter Meriel Gainsbury)

The Seventies saw the lifting of a thirty year embargo on information about a war-time operation that was both secret and vital. At the time, several books on the subject appeared and the story was told on television. I was intrigued by this publicity because I had taken part in the work, although in a most humble capacity.

It was in late 1943 when, as an 18-year-old Wren (Women's Royal Naval Service), I was posted to Gayhurst Manor in North Buckinghamshire. Gayhurst was one of several old houses requisitioned by the Admiralty at the time. All were centred on Bletchley Park, or BP as it was known, the headquarters of British intelligence. Many thousands of servicemen of all branches were engaged in the work, together with civilians with diverse skills and talents, particularly in mathematics and linguistics. Academics and scholars from universities were also brought in, especially from Cambridge.

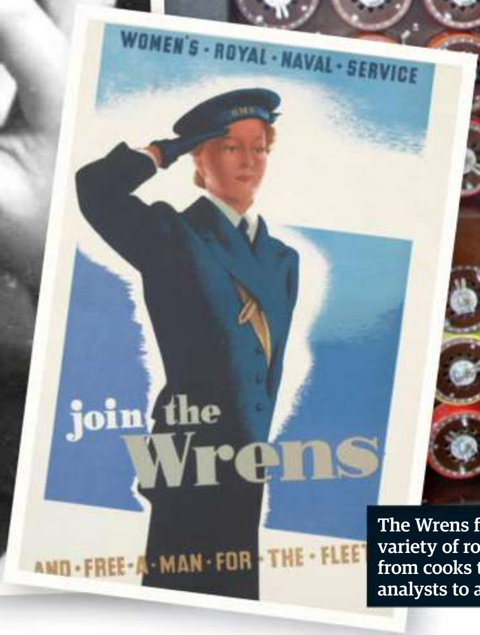
These diverse people had one thing in common - total commitment to their work, and to silence. The whole operation was central to the war effort and was one of its best-kept secrets. It consisted of breaking the German code.

In those days the Enigma machine was a masterpiece of ingenuity, but now, of course, it has been overtaken by electronic sophistication. There were many different types of the machine which the exigencies of war made necessary, each more complicated than the last. The constantly changing numbers and complexities of the permutations it could produce are beyond human comprehension. One of the senior staff has estimated that the number of its permutations was not far short of 6,000 million million million.

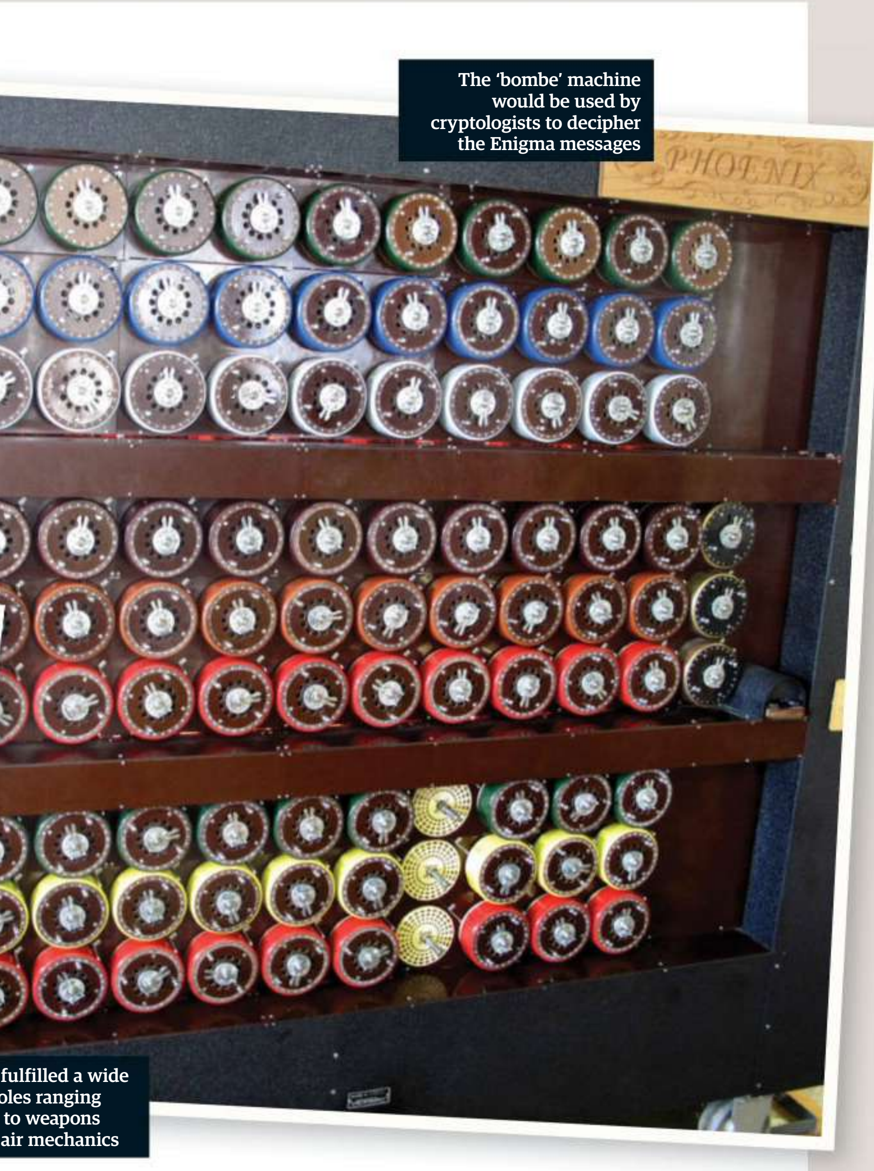
The intelligence work was divided into three stages. The first was carried out in a network of wireless telegraphy stations in this and other

Send your memories to: @ allabouthistory@imagine-publishing.co.uk

The Enigma machine was created at the end of WWI by German engineer Arthur Scherbius


WOMEN'S · ROYAL · NAVAL · SERVICE
join the Wrens
AND · FREE · A · MAN · FOR · THE · FLEE

The Wrens fulfilled a wide variety of roles ranging from cooks to weapons analysts to air mechanics



The 'bombe' machine would be used by cryptologists to decipher the Enigma messages

countries, where the coded messages were intercepted and recorded in Morse. These cyphers were then transmitted to Bletchley Park for the second stage, where cryptographers worked unceasingly to decipher them. The German operator set his machine differently each day, that is to say, the initial key, consisting of three or more rotating wheels, was set at random.

The cryptographers produced some sort of workable hypothesis which might produce the key to the code. It was at this stage that the Wrens at Gayhurst and other outstations played their part. Our work came in the shape of a plan, called a menu, which formed the framework for our operation. Within this, every possible combination was scanned by machines known as bombes which we operated. They housed some five miles of wire and contained thousands and thousands of electrical contacts. The permutations they could produce were beyond the range of human thought.

At Gayhurst we worked in two large adjoining huts set in a nearby wood at the back of the house. Here we worked around the clock. It was an eerie place; you could stand close by the wood and still be unaware that anything was there. We never walked to and from our hut unaccompanied.

There were some 20 machines and each was called after a famous inventor in the field, such as Volta, Faraday, Joule, Ampere. They were quite large, and tall Wrens had a distinct advantage! About forty of us formed a shift, or watch, and we each had a partner from that particular watch. Now and again the machine would stop, showing on a dial four letters which, together with the wheel order, was passed on to our partner in an adjoining room and tested on a small machine. This tiny scrap of information, called a stop, might provide the key to the whole code. If it met certain criteria, it was phoned immediately to Bletchley Park to await developments. If this was indeed the hidden key, word came back quickly and a joyful cry of "Job up" would be heard from the office. The number of successful stops was of course limited; some did not provide the key being sought, but enough were produced by the machines to give us a sense of excitement and achievement.

Of course at the time we knew nothing of the processes which had gone on before our machines were called in, nor anything beyond the completion of our work. This was to be expected and the whole organisation was fragmented in such a way that no one, except a few at the highest level, held more than a tiny piece of the completed puzzle. We continued working around the clock month after month through the momentous D-Day landings and until the war effort reached its climax.

In May of 1945 the war came to an end and our work collapsed like a house of cards. Also collapsed was our sense of discipline, and this was replaced by high spirits of the custard pie variety. But with it too was a strange sense of anti-climax. The work had taken up our energies over a long period of time, and our sudden release from the tension was something that was not readily comprehended or assimilated. We were all volunteers and so for many of us the future held more imponderables.

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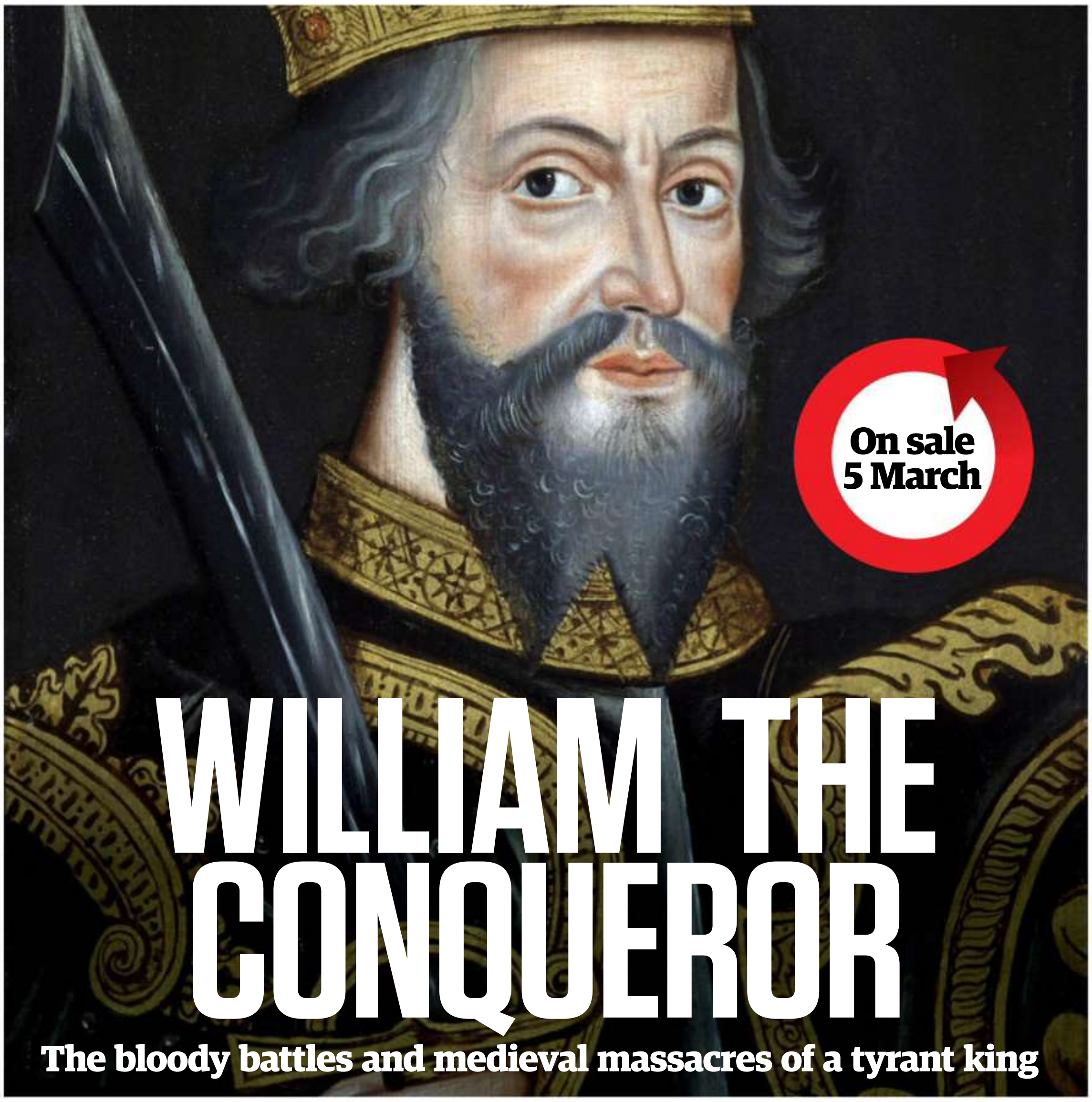

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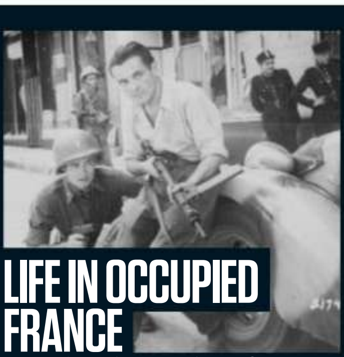

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HISTORY VS HOLLYWOOD

Fact versus fiction on the silver screen

THE OTHER BOLEYN GIRL

Director: Justin Chadwick **Starring:** Natalie Portman, Scarlett Johansson, Eric Bana **Country:** UK/USA **Released:** 2008

How well executed is this depiction of the lives of the Boleyn sisters?

C+

VERDICT A good effort at capturing the drama of the Tudor court

WHAT THEY GOT WRONG...

01 The ages of the Boleyn siblings are very different from historical records. Mary is referenced repeatedly as being the youngest 'naïve' sibling in the film, but historians agree that Mary was born around 1500 and Anne around 1501 - making Anne the younger of the two.

02 The idea Mary could steal her niece from the palace and raise her alone in the country is absurd. Elizabeth had her own household and was raised by a selection of lady governesses. Also, Elizabeth was almost three years old at the time of her mother's execution.

03 Upon being convicted of treason, George Boleyn, Anne's brother, is portrayed as being dragged to his execution sobbing and pleading while a crowd berates him. This is incorrect - George died a dignified death and delivered a long speech to a silent crowd.

04 Mary's first child is shown to be a boy - Henry - when in fact her first child was a girl - Catherine. Henry was born several years later. Henry was also placed under the guardianship of his aunt, Anne; a fact completely overlooked in the film.

WHAT THEY GOT RIGHT...

The portrayal of the Boleyns' uncle, the Duke of Norfolk, is very accurate. He did indeed announce the judgement in court and seal the death sentences of George and Anne. His scheming also continued after their executions, pushing his teenage niece Catherine Howard toward the ageing king.

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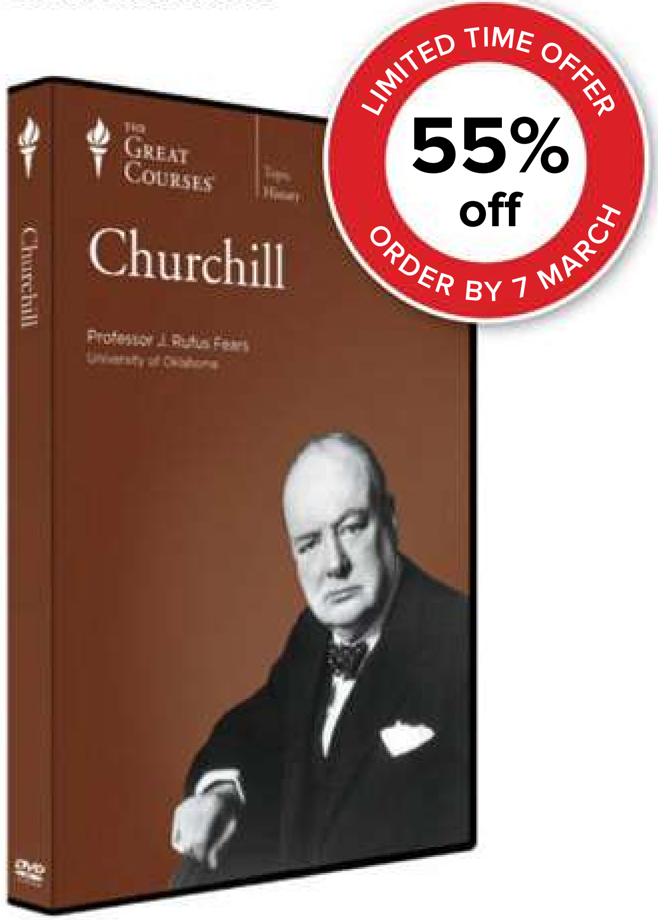

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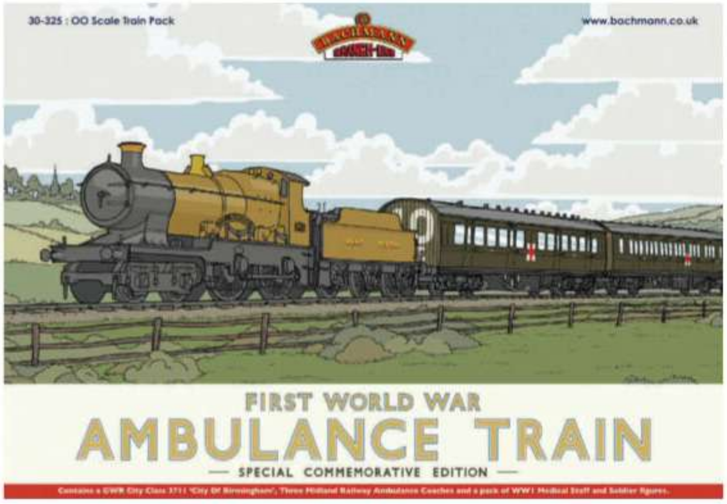
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